20 MAY 1957
MADRAS

THE THEORY OF INDIAN RAGAS

with one hundred and eleven New Ragas.

by

N. K. Hampiholi B. A. (Bom.)

Price: Rs. 25/-

Printed by N. K. Hampiholi at The Tryambak Printing Press, Jawali peth Dharwar.

NOT FOR LENDING

First edition 1953.

[All rights reserved.]

66481
30K

Published by N. K. Hampiholi at his residence In Shukrawar peth Joshi galli, Dharwar.

FOREWARD.

MADRAS
NOT FOR LENDING

It was in the year 1930 that the author was first introduced to Shri K. B. Deval, the then Secretary of The Phil-harmonic Society of Western India, and the eminent exponent of the musical notes in the Indian Ragas, by his music master, the late Shri T. K. Pitre B. A., L. L. B., pleader Dharwar, —who then expounded the progress of research in Indian music, carried on by him and his co-worker Mr. E. Clements. When the author laid before him the problem of the theory of Indian Ragas, he said that it had still remained unsolved, and directed the author to this field of research. With his blessings the author undertook the work and within a year, was able to lay down the new theory, and build up a few new Ragas according to the same. But to his deep regret, Mr. Deval had expired, before the author was able to lay down his work before him.

After the completion of the theoritical portion, the author undertook the application of the same in the evolution and build up of new Ragas, culminating in the research of 111 new Ragas, which exhaust all the available ones of 2 and 3 groups. The number also includes some noteworthy specimens of the Ragas of 4 and 5 groups; and as the author has laid down the foundation, further Ragas of these groups may be built up in due course.

One omission calls for an explanation at this stage. New Ragas of couples, though few in number, have not been embodied in these pages, as their inherent complexities necessitate further experiments with the aid of tuning forks, which were not available to the author at the time.

Author.

Dharwar.
14—1—1953

for our song.

If two notes differ in their frequencies, we say that their pitch is different. Every musical note has a definite pitch when compared with the drone i. e. Sa. As the pitch increases or decreases we have a higher or a lower note. On the whole, if a note has got a greater number of vibrations per second, the higher is the note; and if a note has a smaller number of vibrations per second, then the note is lower.

In addition to the pitch, there are two other qualities of a musical note. One is called the intensity or loudness. It depends upon the force or amplitude as it is called, with which the air particles in a wave are making movements, irrespective of the number of waves per second. This quality of the notes is an important one. There are some schools of music that keep the intensity constant throught their singing, while there are others which increase it as the pitch increases. It is the regulation and modulation of intensity, that brings about marvellous success in the 'Thumari' songs of some schools. Yet the subject is untouched !

The other quality of a musical note is called timber. Its result is sweetness or otherwise of a

musical note. Of late much has been investigated by the Western scientists in this respect; and it has been found that those notes which are rich in over-tones are sweeter than the others. What these over tones are, we shall just see below.

Thus from a musical note, of which we thoroughly understand the meaning, we go to the musical scale. Tradition, both Eastern and Western, gives us a scale of seven 'primary notes; and these in their usual order are named C, D, E, F, G, A, B or Sa, Re, Ga, Ma, Pa, Dha, Ni, as the Indian notation goes. By this, it is understood that seven notes of ascending frequency are placed between a fixed note and its higher octave (a note of double frequency). This scale is called the Major Diatonic Scale or Shudha Saptaka; and Bharata calls it Madhyama Grama. Taking 240, as the frequency of the starting note, the scale including both the the upper and the lower fixed notes, consists of the notes of the following frequencies:—

Sa	Ri	Ga	Ma	Pa	Dha	Ni	Sa
240	270	300	320	360	400	450	480

Laws of vibrating strings:-

A vibrating string like that of a Tambura or

Sitar is governed by the following laws:—

(1) The frequency is inversely proportional to the length of the wire. The shorter the string, the higher is the note; the longer the string, the lower is its pitch.

(2) The frequency is directly proportional to the sq. root of the tension (force with which it is fastened) on the wire. The greater the tension, the higher is the note produced.

(3) Lastly, the thicker the wire, the lower is the note produced; the thinner the wire, the higher is its pitch.

This much introductory information about the science of sound is sufficient to elucidate the following pages, if it only includes one more paragraph on another important law of the vibrating strings.

The over-tones:-

When a stretched string is plucked, it does not give one simple note. It gives what are called over-tones. The fact is that it does not vibrate as a whole only but also in 2, 3, 4, 5, 6, 7 etc. segments simultaneously. And according to the number of segments, the loop (the part of the vibrating wire) is different, and consequently the notes

produced are different. It is these notes that are called the over-tones. They augment the original note, imparting richness and sweetness to it We can actually hear them on the last string of Tambura along with the fundamental note. We lay a special stress upon this phenomenon of the vibrating strings, because it is out of these overtones that the notes in the Indian music are evolved, wherefore we shall have occasion to deal in detail about the subject in later pages.

CHAPTER II.

THE NOTES OR SWARAS.

We have already given in our last chapter the seven primary notes and their frequencies. We shall discuss here in detail about all the various notes used in the Indian music, and try to explain how they can be arrived at by following the simple laws of vibrating strings; and also we shall show that they can be systematically arranged, so as to show clearly the relation existing between each other.

Perhaps there was a time before Bharata, when the octave of seven was divided into twelve notes. They might have been as follows:—

Sa (240), Ri (256), Ri (270), Ga (288), Ga (300), Ma (320), Ma ($337\frac{1}{2}$), Pa (360), Dha (384), Dha (400), Ni ($426\frac{2}{3}$), Ni (450).

Even today these find more use in the Indian Ragas than other notes. The ratio between two consequetive notes (the difference as it is called) is approximately equal. The same twelve notes were in vogue in Europe in the middle ages: and this approximate equality of difference led to the standardization of the scale. The octave was equally divided into twelve parts: and thus we have today the tempered scale of the harmonium and other Western instruments. The following are the notes of the standard scale reduced in terms of frequencies: –

Sa (240), Ri (254.28), Ri (269.4), Ga (285.43), Ga (302.41), Ma (320.04), Ma (339.46), Pa (359.65), Dha (380.91), Dha (403.58), Ni (427.59), Ni (453.04).

From the times of Bharata the Indian musicians have been using 22 various notes. But they were

not recognised in the middle ages in India. Authors like Venkatamakhi and others say that although Bharata and other ancient authors enumerate 22 notes, they can be included in a scale of 12. This view created great confusion about the theoritical knowledge of the Indian music, which has been brought down, perhaps by tradition, even upto day.

Because, there is still amongst us a class of musicians, who deny the very existence of 22 notes in an octave: while there are others, who uphold the standardization and the eventual adaptation of the tempered scale of twelve notes, whatever may be the number of existing notes in the Indian music. They are of opinion that the standardization of notes imparts great advantage to the musician. In the first place any note can be taken as a drone (start--ing note Sa); and the Indian Ragas have been successfully played upon the instruments like harmonium with a tempered scale. But they do not know that the success, if at all, does not depend upon the tempered notes of the harmonium, so much as, upon the proper selection of the notes in the Indian Ragas, which is the very theme of this treatise, and which we shall see treated in detail in the next chapter.

But no one can disprove the experimental facts

brought to light by the Phil-harmonic Society of Western India To say that Mr Deval or Mr Clements could not sing is no disproof of the existence of 22 (rather 24, including Ni 420 and Ma 315) notes in the Indian music. Mr Deval first attempted to cipher the Natyashastra of Bharata; and finding 22 notes enumerated therein, he tried to analyse the airs of certain Indian musicians by the help of a sonometer (diachord as he called). To his great joy he found out 22 notes present in the various Ragas sung by eminent musicians. Further he found out two more rare notes: and arrived at Deva Gandhara, which is obsolete, by calculation. It is too late for the public to take advantage of the publications of the Philharmonic Society of Western India. Mr Clements and Mr Deval have spared no pains to prove that the tempered scale is of no adv-antage to the Indian musician, and to bring to light these 22 notes. They have left no stone unturned in finding out these notes and their uses in the various Ragas, which have all been published. The following is a list of notes found out by Mr Deval together with their frequencies and the inter vals (ratios between the following and the preced-ing notes):—

Table No. I. Notes used in the Indian Ragas:-

Modern name of the note that may be given	Symbol	Frequency	Interval
			$\frac{135}{128}$
Shadja	Sa	240	
			$\frac{25}{24}$
Atikomala Rishabha	Ri	250	
			$\frac{128}{125}$
Komala Rishabha	Ri	256	
			$\frac{25}{24}$
Madhya Rishabha	Ri	$266\frac{2}{3}$	
			$\frac{81}{80}$
Tiwra Rishabha	Ri	270	
			$\frac{256}{243}$
Atikomala Gandhara	Ga	$284\frac{4}{9}$	
			$\frac{81}{80}$
Komala Gandhara	Ga	288	
			$\frac{55}{54}$ } $\frac{25}{24}$
Deva Gandhara	Ga	$293\frac{1}{3}$	
			$\frac{45}{44}$ }
Tivra Gandhara	Ga	300	
			$\frac{81}{80}$
Atitivra Gandhara	Ga	$303\frac{3}{4}$	
			$\frac{28}{27}$] $\frac{256}{243}$
Atikomala Madhyama	Ma	315	
			$\frac{64}{63}$]
Komala Madhyama	Ma	320	
			$\frac{81}{80}$
Madhya Madhyama	Ma	324	
			$\frac{25}{24}$
Tivra Madhyama	Ma	$337\frac{1}{2}$	
			$\frac{2048}{2025}$

Modern name of the note that may be given	Symbol	Frequency	Interval
Atitivra Madhyama	Ma	$341\frac{1}{3}$	
			$\frac{135}{128}$
Panchama	Pa	360	
			$\frac{21}{20}$
Atikomala Dhaivata	Dha	378	
			$\frac{64}{63}$
Komala Dhaivata	Dha	384	
			$\frac{25}{24}$
Tivra Dhaivata	Dha	400	
			$\frac{81}{80}$
Atitivra Dhaivata	Dha	405	
			$\frac{28}{27}$
Atikomala Nishadha	Ni	420	$\frac{256}{243}$
			$\frac{64}{63}$
Komala Nishadha	Ni	$426\frac{2}{3}$	
			$\frac{81}{80}$
Madhya Nishadha	Ni	432	
			$\frac{25}{24}$
Tivra Nishadha	Ni	450	
			$\frac{2048}{2025}$
Atitivra Nishadha	Ni	$455\frac{1}{9}$	

Taking a general survey of the long list, we are confronted with many problems. In the first place are these the very notes which Bharata meant? and do we arrive at these, if we follow Bharata's texts ? Has Sharnadeva meant the same notes as Bharata ? What of the intervals ? Are they useful

in ariving at the various notes, or in building up the Ragas, just as the Western intervals do in build--ing up the modes?

To these questions Mr. Deval's answer is positive. He has pressed hard the texts of Bharata in order to extract something supporting him; but in vain. His supporter, Mr. Clements has rightly shown the difference between the 22 notes as they are sung today, and the 22 tempered notes of Sharnadeva, by the help of a graph. But he upholds the opinion of Mr. Deval that the texts of Bharata give the very notes that are sung today, and that were discovered by Mr. Deval. He says that one Shruti is equal to $\frac{81}{80}$. By Shruti here, he means the ratio between the two consequetive notes. With this ratio as meaning a Shruti, Mr. Clements tries to arrive at the notes, and at Wadis and Sanwadis (chief notes) of different Ragas, whose definitions, and the method to arrive at, have been given in the texts of Bharata. We clearly see from the last column of our Table, that the interval is $\frac{81}{80}$ only in six cases. So, it is futile to arrive at these 22 notes on the basis of Shruti.

Other critics have tried to find the meaning of a Shruti, and are of opinion that the Shruti decreases

as the frequency of the notes increases. But we clearly see from the last column of our table that the intervals are irregular.

It may be that Ragas were discovered first, and then the various notes used therein, were collected and arranged into a list. They might have been added from time to time, thus elongating the list each time. At first they must have been only seven and then increased from seven to twelve, and then to eighteen, as provided by the Grama Ragas of Bharata, and lastly to 22, as enumerated by both Bharata and Sharnadeva. Still the list is not complete, unless we add two more rare notes discovered by Mr. Deval. Thus we cannot expect to find any sort of uniformity in the intervals. Each note has nothing to do with its neighbour preceding or following. Thus comma, limma, half tone or quarter tone or any other interval cannot be regularly applied to the Indian octave containing all the notes in vogue.

But each note has got its own relative notes in the list, as we shall see just below.

As we read Bharata:- The Gramas contain two parts, one from Sa to Ma, and the other from Pa to upper Sa, each symmetrical with the other.

There are six such Gramas, as Bharata enumerates. Of these, it is only the Madhyama Grama and the Ragas arising out of it, that are in vogue in the Manushyaloka. Then he gives a clue to find out six fundamental Ragas arising out of Madhyama Grama. Taking each note as a starting point (Sa), we are to sound the next seven notes entering of course the upper octave. These seven notes form a Grama Raga bearing the name of the starting note. The following are the six Grama Ragas of Bharata with their notes and their modern names: –

The Grama Ragas of Bharata:-

	Sa	Ri	Ga	Ma	Pa	Dha	Ni	
Sa	240	270	300	320	360	400	450	Bilawala
Ri	240	$266\frac{2}{3}$	$284\frac{4}{9}$	320	$355\frac{5}{9}$	400	$426\frac{2}{3}$	Bageshri
Ga	240	256	288	320	360	384	432	Bhairavi
Ma	240	270	300	$337\frac{1}{2}$	360	405	450	Yamana
Pa	240	$266\frac{2}{3}$	300	320	360	400	$426\frac{2}{3}$	Zinzoti
Dha	240	270	288	324	360	384	432	Jivanpuri
Ni	240	256	288	320	$341\frac{1}{3}$	384	$426\frac{2}{3}$	

We are to note here that Sa Grama Raga is identical with Madhyama Grama itself, and note Pa $355\frac{5}{9}$ and Ni Grama Raga are obsolete. Thus we find that, although Bharata enumerates 22 notes, it is only 18 that are reducible in terms of

frequencies. We shall deal in detail about the subject in our next work on the Gramas of Bharata.

Having discussed some of the opinions about the notes, we now propose to give our own method to arrive at them by following simple physical laws of sounding bodies. By this method the derivation of 12 natural notes (the 12 notes given on page 6) is being explained in the text books of physics. The same explanation is to be extended to 24 notes.

We have already spoken of over-tones. It is these over-tones that are the sources of all the notes. When a stretched string is plucked, it vibrates not only as whole, but also in segments of 2, 3, 4 etc- regular arithmetical numbers. Suppose that a stretched string gives a note of 240 frequency. When it makes two segments, it gives a note of 480 frequency (according to the first law of vibrat--ing strings on p. 4). In fact it gives upper 'Sa'. When the string makes three segments it gives a note of 720 frequency. The following table gives these overtones with their frequencies, and their sub-multiples by 2 (the same notes reduced to the normal octave) when the string makes its vibrations in 1, 2, 3, etc. segments: -

Table No. II. The over-tones reduced to the normal octave:-

Segments	Over-tones	reduced to normal octave	Symbol
1	240	240	Sa
2	480	240	Sa
3	720	360	Pa
4	960	240	Sa
5	1200	300	Ga
6	1440	360	Pa
7	1680	420	Atikomala Ni
8	1920	240	Sa
9	2160	270	Ri
10	2400	300	Ga
11	2640	330	Origin of Devagandhara
12	2880	360	Pa

Notes whose frequencies are in the ratio of 1 : 2 or its power i. e. 4, 8, 16 etc. sound like one

similar and exact note; and for practical purposes may be taken as one and the same note. This will be better explained by an example. Suppose notes A and B have got the frequencies of 1 to 2 ratios. When B has finished two waves, one wave of A is at an end. Thus they go on in union (unision as it is called) till no wave is left unblended. If two or more such notes are played in unision, they increase the sweetness of each other. They are said to amplify each other. The frequencies of such overtones should, therefore, be divided by 2 or its power in order to trace its prototype in the normal octave. Following this process we arrive at the notes in the third column of the above table.

When the string makes three segments we get Pa, and when it makes five segments we get Ga 300. Thus Sa is the source of Ga 300 and Pa. But Pa is the first to occur and more dominent than Ga.

Taking the ratios of these three notes we have a tripple of 4 : 5 : 6, which is a very important group, and which we name as a **'harmonic tripple'.*** Similarly 4 : 6 will be styled as a **'harmonic couple'.**

---

* We cannot but adopt our own nomenclature, as other words like chords or triads. used in Western science and music, do not cover the complete meaning of the required purpose here, and might mislead our readers.

and the two in general will be called '**harmonic groups**'. The starting note is the '**mother note**'; similarly the notes in the 5th and 6th ratios are the **5th and the 6th relatives** respectively. Just like the notes in the ratios 1 : 2 : 4 etc the members of these harmonic groups have got the property of amplifying each other, when played in unision or succession. There are other important properties of these harmonic groups, which, we shall have occasion to discuss in detail in our next chapter.

Of the other notes arising from the overtones, Ni (420) is the only one of importance, which was discovered as a rare note in the Indian Ragas. Ri (270) may be taken as the 6th relative of the 6th relative of Sa (Pa of Pa). Thus for our practical purpose we can stop at the 6th segment in considering the notes arising out of the overtones.

Now taking Sa itself as one of the results of the overtones, we can trace back its source. Taking Sa as the 6th relative, its mother note will be Ma (320). Dha (400) is the 5th relative of Ma (320). Taking Pa as the mother note, its 5th and 6th relatives will be Ni (450) and Ri (270) respectively. Working out in this way we are able to arrive at the Major Diatonic Scale, which can be scanned as follows: —

Sa	Ri	Ga	Ma	Pa	Dha	Ni
240	270	300	320	360	400	450
4		5		6		
6			4		5	
	6			4		5

We clearly see from the scanning that the Major Diatonic Scale is the result of the linking of three harmonic tripples each joined to the end note (6th relative) of the other, starting from Ma tripple. Such a linking of the harmonic groups is the characteristic of the Indian Ragas, as we shall see later.

Taking Sa as the 5th relative of a harmonic tripple, the mother note will be Dha (384) and the 6th relative of the group will be Ga (288). Combining this harmonic tripple with Sa Pa couple, we get a quadrant – Dha (384), Sa (240), Ga (288), Pa (360). Leaving off the first note, we have a triad of — Sa (240), Ga (288), Pa (360) — which is called a 'minor chord' in the Western music. Taking the ratios of the frequencies, we have — 10 : 12 : 15, — which also is rarely present in the notes of the Indian Ragas. But this triad itself can be taken as a combination of two incomplete harmonic groups, as the following scanning will make it clear: –

Sa	Ga	Pa
240	288	360
4		6
5	6	

Now each note in the Major Diatonic Scale can be given a chance of becoming a mother note, or a 5th or a 6th relative of some harmonic group, and thus give rise to other notes. Even some of these new notes can be treated as members of some harmonic groups, giving rise to still more new notes. Thus we are able to arrive at all the notes in the Indian music. In fact every note in the Indian music is a member of some harmonic group or the other, some times having its place in more than one group.

If we work out all such groups completely, and turn them all into harmonic tripples, we get a few more notes, in addition to the existing ones, which are abscent in the Indian Ragas for sufficiently good reason. The abscent notes are usually the 5th relatives of some harmonic groups, thus reducing them to harmonic couples. We have already seen that the couple is more dominent than the tripple. For this reason, and owing to the fact, that, when the mother note of a harmonic group is far removed from the drone, the 5th relative of the group is still further removed, we cannot expect such a note to be of any use in the Indian Ragas. Thus it is

abscent and the group is reduced to a harmonic couple. To take an instance: – treating Ni (450) as a mother note, we have the harmonic tripple— Ni (450), 281¼, Ma (337½). In the first place Ni (450) itself is not a direct relative of Sa; and in addition, the note 281¼ is the 5th relative in the above harmonic group. Therefore it will have no place in the Indian music But as we see from our next table, a few groups, however, disobey this rule and are complete harmonic tripples, for which, tradition alone is responsible.

The rare note Ni (420) is the direct result of Sa, when it makes 7 segments. In fact this will be a new ratio of 4 : 7. Taking this Ni (420) as the mother note, its 6th relative is Ma (315). The The obsolete Devagandhara (293⅓) is $\frac{8}{9}$ of 330, the note got by the 11th segment of Sa.

To the list of notes we add a new note Dha(375), which is so simple to arrive at, and is so near in relation to Sa, that it is a wonder, how it has escaped the notice of our ancient musicians. Taking Ga (300) as the mother note, this Dha (375) is the 5th relative. Notes like Ni (455$\frac{1}{9}$) and Dha (378) which already find rare application in the existing Ragas, have been omitted in our new Ragas, while Dha (375) will find more application.

The following table will give the various harmonic groups, with their notes and their symbols:

Table No. III. The Harmonic Groups.

Serial No.	The mother note	The fifth relative	The sixth relative
1	Sa (240)	Ga (300)	Pa (360)
2	Ma (320)	Dha (400)	Sa (240)
3	Pa (360)	Ni (450)	Ri (270)
4	Dha (384)	Sa (240)	Ga (288)
5	Ri (270)	Ma ($337\frac{1}{2}$)	Dha (405)
6	Ni (432)	Ri (270)	Ma (324)
7	Ga (300)	Dha (375)	Ni (450)
8	Dha (400)	Ri (250)	Ga (300)
9	Ri (256)	Ma (320)	Dha (384)
10	Ni ($426\frac{2}{3}$)	Ri ($266\frac{2}{3}$)	Ma (320)
11	Ga (288)	Pa (360)	Ni (432)
12	Ri ($266\frac{2}{3}$)		Dha (400)
13	Ni (450)		Ma ($337\frac{1}{2}$)
14	Ri (250)		Dha (375)

Serial No.	The mother note	The fifth relative	The sixth relative
15	Ma (341$\frac{1}{3}$)	Ni (426$\frac{2}{3}$)	Ri (256)
16	Ga (284$\frac{4}{9}$)		Ni (426$\frac{2}{3}$)
17	Ni (455$\frac{1}{9}$)	Ga (284$\frac{4}{9}$)	Ma (341$\frac{1}{3}$)
18	Dha (405)		Ga (303$\frac{3}{4}$)
19	Ni (420)		Ma (315)
20		Ma (315)	Dha (378)

Thus we clearly see that the drone Sa, is the source of all other notes in the Indian music; and a geneology can be drawn, showing the relations of all the notes to the drone.

The degree of relation:-

Those notes that are directly related to Sa; in any capacity, are said to bear the first degree of relation to the drone The relatives of these notes are said to bear the second degree of relation to the drone. Further, the relatives of these second degree relations, are said to bear the third degree of relation to the drone. The degree of relation of any note, will determine its consonance with the

drone. As the degree of relation rises higher, the consonance of a note falls lower. This quality of the notes will be useful in determining, how far, a Raga, cotaining those particular notes, will be a successful one.

CHAPTER III.

THE THEORY OF INDIAN RAGAS.

We do not propose to discuss here the views of Bharata or Sharngadeva about the theory of the Indian Ragas, although the Gramas and most of the Grama Ragas are still in vogue today. We shall however, approach the subject, as it stands today.

The modern view of a Raga may be said to have begun in the middle ages, when the 22 notes of Bharata were fast disappearing, giving place to 12 only. Collecting all available information upto our times, the gist of the existing theory of Indian Ragas runs as follows:—

There are 12 notes in an octave— Sa, Komala (flat) Ri, Tivra (sharp) Ri, Komala Ga, Tivra Ga, Komala Ma, Tivra Ma, Pa, Komala Dha, Tivra Dha, Komala Ni, and Tivra Ni. Out of these 12

notes, taking Sa, one Ri, one Ga, one Ma, Pa, one Dha, and one Ni —in all seven notes— we get a 'That' or 'Janaka Raga. There are 72 such Thats. The Thats in themselves are Ragas; and in addition they give rise to other Ragas, which are called "Janya Ragas" These are classified as 'Adava', 'Shadava', 'Adava Sampurna', and 'Shadava Sampurna'. If, in a That any two notes except Sa are omitted, we have an Adava Raga (a Raga of 5 notes) In stead, if we omit only one note, we have a Shadava Raga (a Raga of 6 notes). A Shadava or Adava set may be taken in Aroha only (ascending order of the octave) with its original That in Avaroha (descending order of the octave) or vice versa. Then we get a Shadava Sampurna or an Adava Sampurna Raga respectively. The total numbers of such Ragas, given by different authors, are different. In all cases the total rises to the fabulous figure of lacs (Modern mathematics can help us in calculating the actual number of such Ragas: but we have no purpose of the same.) Unfortunately the tradition has it —that a large number of Ragas have been lost along with the submerged ancient culture of India. Out of the 72 Thats only 12 are surviving; and the other existing Janya Ragas have their origin in these Thats only.

With all this wide scope for building up the Ragas, there is a loop hole for exceptions— "रंजयतीति रागः"— that alone is a Raga, which can please. Why a certain set of notes can please so that they can make a Raga, and why other notes cannot, has not been as yet, the problem of any author, ancient or modern, which we are trying to solve by the help of the very laws of the sounding bodies, upon which we based our theory of 22 notes. But before we do that, we shall discuss, in detail, the prevailing views upon the theory of Indian Ragas.

We try to blow up the whole structure of the prevailing theory from the very basis. In the first place, the fact, that there are 22 notes in the Indian music, and not 12, has already been established by the experiments of the Phil-harmonic Society of Western India. And the method to arrive at these, has already been dealt in detail in our last chapter. Although the difference between certain notes is very small, it is appreciable by the trained ear. The Komala Ri of Bhairava and that of Bhairavi. the Komala Ga of Malakamsa and that of Pilu, the Tivra Dha and Tivra Ri of Deskar and Bhup, and other such pairs, can be easily differentiated from each other, when the Ragas containing these, are actually sung. So it will not do to compress these

22 notes into 12 only. And if we do that, the whole science of Indian music will be thrown in confusion. Letting alone the building up of the new Ragas, or reviving the so called lost ones, it will be difficult even to fix up the scale of the existing Ragas.

No doubt, a few Ragas, including the original Gramas and some Grama Ragas of Bharata, seem to obey the rules of Thats, but for different reasons altogether. We have seen that the Major Diatonic Scale is built up of three harmonic tripples. In the Grama Ragas the drone is shifted. but the harmonic tripples in their proper ratios, remain there. That is why they seem to consist of seven notes according to the rules of Thats. And that is no reason why all the Thats should sound like Ragas. To take an instance—if we have a That, consisting of Sa, Tivra Ri, Tivra Ga, Tivra Ma, Pa, Komala Dha, and Komala Ni - the notes would produce a jarring effect, and carry no sensation of a Raga. Having recourse to such a trial and error method of reviving the so called lost Thats, we find no set of notes, pleasing enough, so as to be called a Raga, except the existing ten or twelve Thats. May it be a fact that they never had any existence ? Thus it is of no avail to take a That as a Raga, or a basis for

other Ragas.

Now although there is that hard and fast rule, that a That consists of seven notes only, there are Ragas, comprising more than seven notes, the maximum being twelve. The presence of extra notes cannot be explained on the basis of the That. Some authors point out that the extra notes are 'Alaṅkaras' (ornamental notes, or appendages). This may hold good, when a note finds a rare application. But when it is invariable in a Raga, it cannot be called an Alankara note. Moreover one or two notes can serve the purpose of Alankars. But when they are three, or four, or five, the Alankara notes themselves become more dominent than the original notes of the Raga. And also, why certain notes only can serve the purpose of ornamental notes in a particular Raga, and why others cannot, has not been explained by the supporters of Thats. Further the question arises—where are we to stop in adding the Alankara notes? No limit has been laid down, so that all the twelve notes are being used in a few Ragas like Pilu, Gara, Sarparda and others.

Leaving off the question of the Alankara notes, the basic notes comprising a Raga, are themselves

sometimes more than seven, usually eight. In such cases the origin of the Raga—the That— is ambiguous. Still, tradition has laid down certain Thats as sources of certain Ragas. The Khamj That, for instance, is the source of Khamaja Raga. The That consists of — Sa, Tivra Ri, Tivra Ga, Komala Ma, Pa, Tivra Dha, and Komala Ni; while the notes of Khamaja Raga, as analysed by the Phil-harmonic Society, are as follows:—

Sa	Ri	Ga	Ma	Pa	Dha	Ni	Ni
240	270	300	320	360	400	$426\frac{2}{3}$	450

Now the note 450 may represent Tivra Ni according to the old opinion. But the Khamaj That does not make any provision for any Tivra Ni. There is only one Ni and that is Komal. Thus, even the notes of Khamaj Raga itself have no connection with the Khamaj That. The same thing can be said of Bilawal, Yaman, Pilu and other Ragas and their Thats.

In order to show that the Janya Ragas have no connection whatsoever with their Janaka Ragas or Thats, we shall take the instance of Tilaka-kamoda. This Raga is said to have its source in Khamaj That. We have already given above, the notes of Khamaja Raga and Khamaj That. The following

are the notes used in Tilak-kamod:—

Sa	Ri	Ga	Ma	Pa	Dha	Ni	Ni
240	$266\frac{2}{3}$	300	320	360	400	$426\frac{2}{3}$	450

We clearly see that the note $266\frac{2}{3}$ does not appear in Khamaj Raga. Thus Tilak-kamod can-not be said to have its source in Khamaj Raga, which in its turn, as we have shown above, has no connection with the Khamaj That.

The upholders of the That theory have often been puzzled, when tracing the origin of many Adava Ragas. The five notes of an Adava Raga can appear in as many as four Thats. Discussions have often arisen in determining the original Thats of some Adava Ragas, but with no results. Thus Malakansa is put in Bhairavi That by some, and in Asavari by others. The fact is that one Raga has nothing to do with the other, each standing by itself. One important characteristic of the Ragas is, that, a set of notes, as analysed in the octave of 22 notes, appearing in one Raga, never reappears in another. Musicians used to say that the notes in such Ragas as Bhup and Deskar, are all the same; but the method of singing them is different. But the Phil-harmonic Society has laid bare the real

difference that exists between Deskar and Bhup. The fact is that the set of notes used in one Raga, are not the same as in the other.

As we shall see later, the number of notes in a Raga, depends upon the number of harmonic groups therein. If the groups are couples only, or are incomplete, then the notes in the Raga will be less. Further, if two harmonic groups have more than one common note, the number of notes in the Raga, is still reduced. If the drone is not a member of one of the harmonic groups that the Raga is built up of, then the number of notes in the Raga is increased by one more note. Thus the idea of Adava, Shadava, or Sampurna, has nothing to do in the make up of a Raga. Tradition has fixed the minimum number of notes in a Raga as five. But there can be Ragas of even four notes, which however, will be diminitive. As we have already seen, although the tradition has fixed the maximum number of notes in a Raga, as seven, it has transgressed its own bounds, in having Ragas of eight or nine notes, even excluding the Alankara notes. Seven perhaps, is the normal number of notes in a Raga, the less number making up smaller Ragas, and the more, the larger ones. But in such larger Ragas, as the tradition cannot avoid the Aroha and

Avaroha Swarupa (the ascending and descending order of notes) of a Raga, when the number of notes increases to eight or nine, some intervals become smaller—not so small of course, as not to enable the musician to sing the two consequetive notes—and we have two notes of the same designation such as Ni ($426\frac{2}{3}$) and Ni (450), or Ma (320) and Ma($337\frac{1}{2}$). But tradition has been haunted by a false fear, which does not allow two notes of the same designation to be sung consequetively. Hence we have it, that, when there are two 'Ni's or two 'Ma's in a Raga, one is sung in Aroha, and the other in Avaroha; or the two are taken alternately with a neighbouring note. This rule, however, can be quashed, and two notes of the same name can be sung or played consequetively. But such occasions rarely occur except in Tans.

We have usually Adava Sampurna and Shadava Sampurna Ragas, and not vice versa—Sampurna Adava and Sampurna Shadava Ragas—although the theory of Thats has laid them down. After scanning such Ragas, we have found, that, when a Raga has three or more harmonic groups, the notes of two of them are sung in Aroha, and the notes of all the groups, in Avaroha, the common notes being used in both. But it will suffice us

to say, that the Raga consists of certain harmonic groups, taken in any order. As we have said above, one Raga differs from the other in the set of notes that it uses. Taking this set as fixed, the notes in it can be sung in any order so as to produce the particular sensation of the Raga. In the first place, the Aroha and Avaroha order of the notes of a Raga is itself unnatural. Except its use in Tans it is only a pen and paper arrangement. Because, when we begin to sing a Raga, we are not pronouncing its notes in Aroha and Avaroha, but are producing the notes of its harmonic groups, taken one by one, or mixed, in succession. Therefore, Adava, Sampurna or Shadava Sampurna arrangement of the Ragas is meaningless. Just as a false fear is hindering the use of two notes of the same designation to be sung in succession, as we remarked above, a similar false fear is withholding the use of all the notes of certain Ragas, both in Aroha and Avaroha. To try an experiment, if all the notes of such a Raga are sung both in Aroha and Avaroha, the characteristic sensation of the Raga is not deffered in the least. Taking for instance, the notes of Asavari, or Desh, or Khamaj, if we sing or play all the notes in Aroha, the sensation of the Raga is not in the least spoiled. In fact

in addition to Tans, we are actually doing it, when we are singing. When a note in Avaroha only is sung with its lower neighbour, there is a point of inflexion in the Raga, and such a point is common both in Aroha and Avaroha.

Having discussed the theory of Thats and the Ragas which seem to arise out of them, we now propose to lay down our own theory, the ingredients of which, can be collected from the very existant Ragas. By the adoption of this theory, we can solve many problems in the Indian music, which remain yet unsolved for so many centuries We can show, on a scientific basis, why a certain set of notes, is used exclusively in a certain Raga; why a certain note or notes, is or are, dominent (Wadi and Samwadi) in a certain Raga—a problem, which has vexed so many different schools of music, and raised controversies amongst them, but still remained unsolved. We can show, why some Ragas have got a certain range fixed. We can say, why some Ragas are so pleasing, while others are so curt and difficult of appreciation, as well as difficult to pick up.

The grounds for our proposed theory, can be collected by scanning a few Ragas in the following manner:—

Raga Hansadhwani.*

Sa	Ri	Ga	Pa	Ni
240	270	300	360	450
4		5	6	
	6		4	5

We see that Raga Hansadhwani is made up of two harmonic tripples (Nos. 1 and 3 of Table No. III. on page 21) linked together by Pa, which occurs in both the groups.

In stead of arranging the notes in the ascending order, if we arrange them in its harmonic groups as—Sa, Ga, Pa; Pa, Ni, Ri— we get the Raga characteristic of Hansadhwani. The place of Pa is important, being common to both the groups. Therefore it is Wadi (dominent note). As it is linking the two harmonic groups, we call it "**a link note**".

Raga Nagaswarawali

Sa	Ga	Ma	Pa	Dha
240	300	320	360	400
4	5		6	
6		4		5

---

* We are not making any distinction between Karnataki and Hindustani Ragas. The notes, used are the same; a large number of Ragas are common to both the systems. Still it is a pity that a distinction is made between Karnataki and Hindustani systems of music–a distinction without difference!

Here the two harmonic tripples are linked by the drone itself.

Raga Dhani

Sa	Ri	Ga	Ma	Pa	Ni
240	270	288	324	360	432
	5		6		4
		4		5	6

Here the drone is not a member of the harmonic groups that the Raga is made up of. But all the notes except Ma, are within the second degree of relation to Sa. The link-note Ni is dominent.

Raga Sarang

Sa	Ri	Ma	Pa	Ni	Ni
240	270	324	360	432	450
	5	6		4	
	6		4		5

In this Raga the drone is not a member of the harmonic groups that the Raga is made up of. But the three notes — Ri, Pa, and Ni (450) are within the second degree of relation to Sa.

We have already shown that Raga Bilawal (Major Diatonic Scale) can be scanned in this way (page 18). All the Grama Ragas can be scanned in the same manner. They are made up of three harmonic tripples linked together by two link notes. The following are two illustrations of this type:—

Raga Zinzoti.

Sa	Ri	Ga	Ma	Pa	Dha	Ni
240	$266\frac{2}{3}$	300	320	360	400	$426\frac{2}{3}$
4		5		6		
6			4		5	
	5		6			4

It is obvious that Sa and Ma are the link notes.

Raga Yaman

Sa	Ri	Ga	Ma	Pa	Dha	Ni
240	270	300	$337\frac{1}{2}$	360	405	450
4		5		6		
	6	•		4		5
	4		5		6	

Three harmonie tripples must have two link notes, which serve the purpose of Wadis and Samwadis. Which of the two is the Wadi or Samwadi, cannot be decided, as both are equally dominent. But tradition has decided such problems arbitrarily.

We shall examine another class of Ragas:—

Raga Bhup

Sa	Ri	Ga	Pa	Dha
240	270	303	360	405
4			6	
	6		4	
	4			6
		6		4

In this Raga we see that it is only the harmonic couples that are linked together, giving no room for tripples. But as we have already seen, the couple is more dominent, and hence more pleasing, than the tripple; and that is why the Raga is so pleasing in effect. We require at least four such harmonic couples to make a Raga. And there will be three link notes in such a small Raga; and all being dominent, it is futile to fix particular notes as Wadi or Samwadi. Two, or three, when the drone is a group member — harmonic couples will form diminitive Ragas.

Raga Durga.

Sa	Ri	Ga	Ma	Pa	Dha
240	270	$303\frac{3}{4}$	320	360	405
6			4		
4				6	
	6			4	
	4				6
		6			4

Here also it is only the harmonic couples that combine to form such a popular Raga as Durga. The inclusion of Ga ($303\frac{3}{4}$) has been the subject of controversy between two different schools of music. But we can see it decided here, that, Ga ($303\frac{3}{4}$) being the sixth relative of Dha (405), has got its

own place in the Raga. If we however, stop at the fourth group only, excluding the fifth couple, then Ga has no place in the Raga. But then Dha will not be a dominent note.

Raga Jayajayawanti

Sa	Ri	Ga	Ga	Ma	Pa	Dha	Ni
240	270	$284\frac{4}{9}$	$303\frac{3}{4}$	320	360	405	$426\frac{2}{3}$
		4					6
				6			4
6				4			
4					6		
	6				4		
	4					6	
			6			4	

We see what a fine panorama of notes is stretched before us by Raga Jayajayawanti. There are seven harmonic couples, each linked to the sixth relative of the other. These seven harmonic couples will furnish us with eight notes, the drone itself being a member of two such groups. As there are six link notes, Wadi and Samwadi notes are determined arbitrarily

We now examine a class of Ragas which consist of harmonic tripples and couples mixed, or which contain incomplete groups. These incomplete groups have their notes in such ratios as 4 : 5 or 5 : 6.

Raga Deskar

Sa	Ri	Ga	Pa	Dha
240	$266\frac{2}{3}$	300	360	400
4		5	6	
6				5
	4			6

Here one group is incomplete. If Ma (320) is added the group is complete; and there is one Karnataki Raga, with this group complete.

Raga Vasant

Sa	Ri	Ga	Ma	Pa	Dha	Ni
240	256	300	$337\frac{1}{2}$	360	384	450
4		5		6		
5					4	
	4				6	
				4		5
			6			4

We see that the Raga contains five groups—one tripple, two couples, and two incomplete groups. Were all the groups complete, three more notes should have been added; and the Raga would have been too big to be handled. But as it stands, the success of the Raga is due to the symmetry that it contains. Arranging the notes as follows:—

Ni Sa Ri Ga | Ma Pa Dha Ni

$\frac{16}{15}$ [illegible] [illegible]$\frac{5}{4}$ $\frac{16}{15}$ $\frac{16}{15}$ $\frac{75}{64}$

we see that the Raga is divided into two parts, the intervals between the notes in one part, appearing again in the other. Further, taking the notes on the left hand side, one by one as mother notes, the right hand side contains their corresponding sixth relatives. This gives great success to the Raga.

As we have already pointed out, the original six Gramas of Bharata are symmetrical, the axis of symmetry lying between Ma and Pa. Moreover all the six Grama Ragas of Madhyama Grama and a few others like Vasant are also symmetrical. But unlike the original Gramas of Bharata, their axis of symmetry is shifted to the right or left from its normal place between Ma and Pa.

But the symmetrical structure of a Raga is merely incidental It is not that all the Ragas are symmetrical. Nor is it a necessary condition for the formation of a Raga just like the presence of harmonic groups in it. But the symmetry, wherever it appears, is highly useful in studying the Raga.

Another similar incidental issue of the structure of Ragas, is the appearance of a secondary harmonic group—a complete tripple some times. The following scanning of a Raga containing such a secondary group, will illustrate the matter clearly.

Raga Adana

Sa	Ri	Ga	Ma	Pa	Ni
240	266$\frac{2}{3}$	284$\frac{4}{5}$	320	360	426$\frac{2}{3}$
	5		6		4
		4			6
6			4		
4				6	

This Raga primarily consists of only two groups—one tripple, Ni Ri Ma, and the other a couple, Ga Ni. But Ma in the Raga with the drone Sa becomes a harmonic couple, the two together giving rise to a secondary harmonic couple. Not only this, but the group tends to become complete, and during actual singing of Adana, we often hear the group Ma Dha Sa included therein. Pa is following the drone giving rise to another secondary group

We have, now, sufficient data to lay down the definition of a Raga. All the Ragas scanned above, are made up of harmonic groups—couples, tripples, or even incomplete groups. But in all these Ragas one important feature is that the harmonic groups are linked together by common notes. In the above scanning we find no instance of two harmonic groups simply put together without a link note. So we can define a Raga as follows:—

A Raga is a combination of two or more harmonic groups linked together by common notes.

Looking to such Ragas as Sarang, we shall have to lay the following condition to the adove definition:—

Where the drone is not a member of one of the harmonic groups that combine to form a Raga, the maximum number of notes in the Raga, must be within at least the second degree of relation to the drone.

We can go still deeper into the matter, and search for scientific reason for the above definition.

Western critics of Indian music have often remarked, that, one feature of Indian Ragas, is that it is free from beats. Beats arise only when the notes are not harmonic. When two notes are in such ratios as 4 : 6, 4 : 5, 5 : 6, 4 : 7, and 4 : 9, there is no scope for beats, whether the notes are played in unision or succession. And the harmonic groups of Table No. III contain such notes. Supposing two notes A and B have their frequencies in the ratio 4 : 6, when A is at the end of its second wave, B will join it after finishing its third wave. So they are amplifying each other just like two notes, whose frequencies are in the ratio 1 : 2. A similar thing can be said of notes in other ratios in Table No. III. In fact the harmonic

groups are miniature Ragas. But as we go from 4 : 6 to 4 : 9 in the above ratios, the effect of consonance will fall lower. Still it will not be so low as to produce beats.

This much is so far as only two notes are concerned. What of a Raga that contains at least five notes ? The notes in a Raga, as it is sung, do not regularly follow each other in the above ratios. Such is the fact no doubt. But as a Raga is being sung, the notes in the above ratios are sufficiently near each other so as to blend with their neighbouring relatives. We shall illustrate what we say by actually scanning a song:—

Raga Hansadhwani

Pa	—	—	—	Ni	Ri	|	Sa	Ni	Pa	Ga	Ri	—	|
4				5	6			5	4		6		
6							4		6	5			

Ga	—	Ri	Sa	Ni	Sa	|	Pa	Ni	Sa	Ri	Ga	Ri	|	Sa	—
		6		5			4	5		6		6			
5			4		4		6		4		5			4	

We clearly see from the above scanning, that the notes in each harmonic tripple are sufficiently near one another, so as to produce the blending effect. Pa, Ni, Ri, of one harmonic tripple, will

blend with one another and merge in Pa, their mother note; and Sa, Ga, Pa, will do the same, and finally Pa will blend with Sa. Thus we see that the drone is the recipient as well as the source of all the notes of Hansadhwani.

We should note down here clearly that the notes do not blend actually as they do, when they are played in unision; but they seem to blend with each other, because they are capable of blending. It is the ear that picks out the harmonic notes, and enjoys the pleasure of their blending effect. In this respect the ear closely resembles the eye in its behaviour. In all pictures, we know that, there is what is called a vanishing point. The point itself is not marked there, but is left to the eye for being recognized. Supposing, for instance, that we have to draw a straight row of telegraphic posts, all of which are of equal lengths, in the picture they cannot be represented by a row of lines of equal lengths; but we shall have to draw a number of parallel lines, one shorter than the other, so that if two straight lines are drawn, one through their bases, and the other through their tops, they shall meet at a point, which is the above mentioned vanishing point, and represents the point on the horizon in front of the artist, when he is copying his

picture from the actual state of things. From all four directions, as well as from above and below, the things depicted in the picture seem to meet at this point. If they do so, then only the eye enjoys the picture and sets the brain to think of no difference between the actual state of things and the drawing. The ear behaves in exactly similar manner, when it is hearing and enjoying a Raga. The vanishing point here is represented by the drone. All the notes seem to merge into the drone. First they seem to merge into their mother notes; and the mother notes in turn seem to merge into the drone. Just as no actual lines are drawn through the bases and tops of the telegraphic posts, although the eye is able to recognise that these tops and bases are in straight lines which meet at a point, so also, no actual blending and amplification of the waves of the notes take place, although the ear is able to recognise that if the notes were to be produced in unision, they would certainly have blended and amplified one another, finally merging into the drone. It is this quality of the notes in a Raga that produces harmony, just as the vanishing quality of the drawings produces beauty.

CHAPTER IV.

THE PRESENT INDIAN RAGAS.

It would have been better for students of music — both theorists and practitioners—if a compendium of all the available Ragas in India. properly analysed and reduced in terms of frequencies, and arranged in alphabetical order, were available. There have been many attempts, made in this field, by others than the Phil-harmonic Society; but as they are incomplete and one-sided, we cannot but repeat the remark made by E. Clements so many years ago, that, much spade work still remains to be done in the field.

This deficiency does not, however, hinder us from looking upon the present Ragas from a new angle of vision, which we have laid down in our last chapter. From that point of view the present Ragas may be classified as follows:—

(1) Ragas of harmonic couples.
(2) Ragas of two harmonic tripples.
(3) Ragas of three harmonic tripples.
(4) Ragas of any number of groups—usually

four— which are harmonic couples, tri-pples, and incomplete groups.

We propose to deal with these classes here, one by one. Space however, does not permit us to scan all the Ragas available to us.

Ragas of harmonic couples:-

Of all the Ragas, the Ragas of harmonic couples carry the best harmony, and are the sweetest to hear. The reason, we can anticipate from the foregoing pages. The couple—the notes in 4 : 6 ratio —is the first to appear as the result of overtones, and most blending in effect of all such groups, harmonic or otherwise. Starting from some note, a continued proportion of this ratio will furnish us with notes making up some of the most beautiful Ragas. Fortunately almost all the possible Ragas of harmonic couples are in existence, leaving a very small room for the researcher. Of this class of Ragas we have already mentioned Bhup, Durga, and Jayajayawanti. Others are Lankashri, Sindhada, Madhumada-saranga, Gurjari-todi, Devamanohari, and Asavari-todi. Although linked with one or two other groups, couples abound in Natabhairavi, Gouda-saranga, Desa, Khamaj, Hameer, Chhaya-nata, Gouri, Shri, Dhanyashri, Devagiri and

others After close research we find other Ragas which closely resemble Yaman, two varieties of Malcoms, one variety of Dhani, Bhimpalas, Zinizoti, and Hindil. The differences are slight; but even small differences, as we have already seen in the cases of Deskar and Bhup, and of Adana and Dhani, are sufficient to give separate Ragas. So further research in this field is necessary.

Ragas of two harmonic tripples:-

These are the simplest and the smallest of all the Ragas. They are formed when two harmonic tripples will combine with a common note, which will be evidently the dominent note in the Raga. For each Raga tradition requries two dominent notes; and the second is chosen arbitrarily. Of the present Ragas, Nagaswarawali, Gara bereft of all its Alankara notes, Kuntala-warali with Pa in place of Ri, Saranga, Dhani, Hansadhwani, Bibhas of one school and others belong to this class. Adana, primarily belonging to this class, has already been scanned in the last chapter. Malashri also belongs to this class; but Dha (375) is abscent, as the note itself has not been in vogue so long. Nagaswarawali and Hansadhwani are the model Ragas of this class; and following these models, new Ragas can be synthetically built up.

Ragas of three harmonic tripples:-

These are made up of three harmonic tripples linked together by two common notes. This is the normal class of Ragas, the Major Diatonic Scale being the best model of the same. This scale however, appears under the names of three different Ragas – Bilawal, Ramasag, and Lakhasag. A few other scales also bear the names of two different Ragas The question arises—if two Ragas have the same scale, are they really different ? We have already said before, that it is the set of notes that determines the Raga. Therefore it seems to us that the Ragas are not different. *

Of other Ragas belonging to this class, the six Grama Ragas enumerated on page 13, are important. In addition to these, Garudadhwani, a variety of Bibhas, Marawa Puriya, Sohani. Kamawardhini, Shreeranjini, Kambodhi. Kharaharapriya, Latangi,

*Slight differences in notes like Dha 400 and Dha 405 Ga $284\frac{4}{9}$ and Ga 288, or Ri $266\frac{2}{3}$ and Ri 270, are sufficient to give different Ragas. But in such cases the groups containing them are different; so the Ragas will be different. On the other hand, in a Raga, if an unimportant note (e. g. a fifth relative) is delated, or if a new relative of a dominent note is inserted, even then the Raga does not sound as a different one from the original. Then there remains no question of two different Ragas having the same set of notes—having the same harmonic groups !

Mohanam and others belong to this class. Some of these are mitigated and have lost a 5th relative. Shreeranjini is worth noting. What we anticipate in Adana, (vide p. 41) actually happens in this Raga. With all these Ragas, the list is not exhaustive, and there is much scope for research.

Ragas of any number of groups:-

A large number of Ragas, which consist of harmonic couples, tripples, and incomplete groups, linked together by common notes, belongs to this class. Wherever these Ragas contain incomplete groups, they have often raised controversies as to, whether a certain note should be added or delated. The reason for such problems is obvious. Such groups tend to become complete, or, are reduced to couples, adding or dropping off a note. The normal number of groups in this class is four. But there are Ragas containing as many as six groups, providing eleven notes. The success of many Ragas of this class is due to the symmetry that they contain.

Lastly there remain a few Ragas like Bahaduri -todi, Mangala-bhairava, Desi todi, Chakrawaka, Ganawaridhi, Ramapriya and others, which do not fall under the perview of our new theory. In such

Ragas a note or two stand aside, being unlinked to any of the groups that the Ragas contain. These have remained still problems to us.

CHAPTER V.

BUILDING UP NEW RAGAS.

After closely following the fore-going pages, any susdent of music can be braced up to build up new Ragas. Still it is not an easy thing to do. Such an adventurer must be thoroughly acquainted with every one of the harmonic groups in Table No. III. Each note and its relatives must be his friends. In order to acquaint oneself with these harmonic groups, one can take the help of any string instrument with moveable frets like Sitar or Dilruba.*

---

*For our experiments we have prepared an instrument which we are calling a 'Multichord'. On a flat board 5 or 6 strings are stretched between two parallel bridges. The first two strings are tuned for Sa, and two frets are fixed between the two bridges, so that, if the second string is pressed upon them, they would give respectively Ga and Pa dead beats. The other strings should be tuned for the mother notes of the Raga under trial, so that they would give, on the frets all the remaining notes of the Raga. The final tests of these new Ragas should be made on a set of tuning forks of required frequencies.

These harmonic groups, as we have already remarked, are miniature Ragas in themselves. It only remains to link together two or more such groups with a common note or notes between them in order to build up synthetically new Ragas, which we have tried to do in our next chapters. The diminitive Ragas and the existing ones, so far as our knowledge goes, are omitted or pointed out in the foot note. Repititions are also omitted.

In arranging the Ragas, each note in Table No. I. on page 9 is taken, and the harmonic groups wherein it occurs are linked together. Usually a note occurs in 3 harmonic groups in three different capacities—as a mother note, a fifth relative, and a sixth relative—which will furnish us with 3 different Ragas of two groups.

This is so far as the Ragas of two groups are concerned. In order to build up the Ragas of three groups, each Raga of two groups is taken as a base, and every note in it is given a chance of being linked to other harmonic groups wherein it occurs. As for the Ragas of more than three groups, we have already remarked that the bulk of the existing Ragas belongs to this class. And also, as the number of groups in a Raga increases, the number of notes also increases; and the Raga will be bulky

Moreover the notes in the songs will have less chance of coming near their harmonic relatives. So, in building up the Ragas of four or five groups, special selection of the groups shall have to be made so that their mother notes themselves are closely related.

After fixing up the scale of each Raga, an air (Chisa) is composed in the Indian system of notation; and a song follows along the notation. These songs are selected from the works of ancient authors like Kabir, Tukaram and others. Some Knnada songs are our own compositions. A few Taranas and Surawats are sprinkled here and there.

In composing the airs in the new Ragas, the following rules are observed as far as possible. These rules, in turn, are framed after studying the trend of the existing Ragas; and they follow also the foregoing theoritical principles:—

(1) See that all the notes, the Raga contains, are present in the first line of the air.

(2) Never take the notes in the ascending or descending order; but take them in harmonic groups in any order, often repeating the link notes.

(3) Make it a point to keep the Sama Tala

on the link note. If there are more than one link notes, give each one a chance to coincide with Samatala.

(4) In Astayi (the first part of the air) do not enter the upper octave as far as possible. But do not forget to include one or two notes from the lower octave. In Antara (second part of the air) let the notes in the upper octave be as few as possible. Never go beyond Ma, at least beyond Pa. Let the ascending or descending order of the notes —a modern hobby in music— if necessary, be given a chance in the last part of the air.

Even if these rules are not observed, and the notes in a Raga are sounded pell-mell, still the characteristic sensation of the Raga is not spoiled in the least, provided the timing is rapid enough, and other rules are observed.

Within these limits the artist has sufficient scope to exhibit his skill. He can sing his 'Mends' from a mother note to its fifth or sixth relative; or give out a rapid succession of few notes, forming 'Gamaks'. He can take long pauses upon the link notes along with a few neighbouring ones giving out 'Alaps'; or can flourish a long and rapid succession of notes in ascending and descending

order, forming 'Tans'. Thus in his own way the musician can expand these new Ragas, just as he can do the present ones. As the space does not permit us to give all these for every one of the new Ragas, for specimens sake, we have given the expansions of only two Ragas—Raga No. 1. of two Groups and Raga No. 1. of three Groups.

These Ragas are not mere pen and paper adventures We are singing them every day; and our desciples are learning the same. Any student of music, having knack enough to pick up airs written in notations, can learn these all and sing them well. We are always at the service of our readers and students of these Ragas for any reference that they want to make.

Symbols and abbrivations:-

So far as the notes are concerned there will be no confusion, as we have expressed them in terms of frequencies. Where two notes of the same name occur, the lower one is marked with a dash as:— Ga-

A note in the upper octave is accompanied by a higher ² as:— Sa²

A note in the lower octave is accompanied by a lower ₂ as:— Pa₃

A long dash following a note will suggest the elongation of the same by one syllable (Matra) as Sa —

An Avagraha following a letter in the song will suggest the elongation of the same by one syllable as:— ऽ

Sama Tala is shown by:— =

Tala is shown by:— ×

Kala is shown by:— ÷

A line to be repeated begins with a star as:— *

All the songs are to be sung in Tala Triwat of Madhya Laya.

Astayi and Antara are separated by a small dash in the middle.

There will be only one Raga of a single group (Group No. I) containing five notes, all of which are the results of the overtones of the drone. Not feeling it necessary to make a separate chapter for

the same, and also in order to illustrate the use of symbols, we have given it below.

A Raga of one group.

Sa	Ri	Ga	Pa	Ni
240	270	300	360	420
4	9	5	6	7

×	=	×	÷
pa ni pa pa	sa^2 — sa^2—	ga ga ri sa	ga — ga—
ध न्य मा य	व्या ऽ ली ऽ	सु कृ न्ता चें	फ ऽ ळ ऽ
sa^2 sa^2 ni pa	ga ri ga —	pa ga ri sa	ga ri sa —
फ ळ तें नि	फं ऽ ळ ऽ	ह ऽ री ऽ	वी ऽ ण ऽ
	———	———	
pa ni pa sa^2	ga pa sa^2 —	ga^2 ri^2 ga^2 ri^2	sa^2 — sa^2—
वे दा चें ही	बी ऽ ज ऽ	ह रि अ ऽ	क्ष ऽ रैं ऽ
pa ga ni pa	ni pa ga ri	pa ga ri sa	ga ri sa —
प वि त्र सो	पा ऽ रैं ऽ	हें ऽ चि ऽ	ए ऽ क ऽ

CHAPTER VI.

NEW RAGAS OF TWO GROUPS.

Raga No. 1.

Sa	Ga-	Ga	Pa	Dha
240	288	300	360	384
4		5	6	
5	6			4

×	=	×	÷
dha$_2$sa ga-sa	sa dha$_2$.sa—	ga pa dha pa	ga — sa —
ना म वी ण	मु ऽ ख ऽ	स पाँ चैं तें	बी ऽ ळ ऽ
ga pa dha pa	sa^2— sa^2 –	dha pa ga sa	ga- — sa—
जि व्हा न व्हे	का ऽ ळ ऽ	स ऽ पं ऽ	आ ऽ हे ऽ

———

ga pa dha sa^2	ga-^{2}— sa^2—	ga^2 ga^2 sa^{2}sa^2	ga-^{2}— sa^2—
वा चा न व्हे	ला ऽ व ऽ	ज ळो त्या चें	जि ऽ णें ऽ
dhasa^{2}ga-^{2}sa^2	ga^2— sa^2—	sa^2 dhapa ga	ga- — sa —
या त ना भो	ग ऽ णें ऽ	य ऽ म ऽ	पु ऽ रीं ऽ

Alaps:-

Ga- - sa — ga — sa — dha_2 — sa — ga- — pa_2 — dha_2 — sa — ga- — sa — ga — sa — sa —

Pa ga — sa — ga- —sa; dha — pa — ga— ga- — sa—; sa^2 — dha — pa — ga — ga- — sa —

Ga pa dha sa^2 — ga^{-2} — sa^2 — ga^2 — sa^2 —; dha pa ga sa ga- — sa —

Ga — pa— sa^2 —; dha — sa^2 — ga^{-2}— sa^2 —; ga pa dha sa^2 ga^{-2} — pa^2 ga^2 — sa^2 — dha— ga — pa — ga — sa dha_2 sa.

Gamaks:-

Pa_2 dha_2 pa_2 dha_2 sa; pa_2 dha_2 sa ga-; ga pa ga sa ga- sa; ga pa dha pa ga ga- sa; sa^2 dha pa ga ga- sa; ga- pa dha sa^2 ga^{-2}; ga pa dha sa^2 ga^2; ga^2 ga^{-2} sa^2 dha pa ga ga- sa.

(Alaps and Gamaks may be mixed together)

Tans:-

Ga pa ga sa ga- sa dha_2 sa; pa ga ga- sa dha_2 sa ga- sa; ga pa dha sa^2 pa ga ga- sa; ga pa dha sa^2 ga^2 sa^2 ga^{-2} sa^2 ga^2 ga^{-2} sa^2 dha pa ga ga- sa.

Sa^2 dha pa ga pa dha pa sa^2; dha sa^2 ga^2- sa^2 dha pa dha sa^2; pa^2 ga^2 ga^{-2} sa^2 dha pa ga sa. etc-
(It is better if the notes in Tans are sung in doubles)

The next Raga in order will be Nagaswarawali·

Raga No. 2.*

Sa	Ga	Ma	Dha-	Dha
240	288	320	384	400
5	6		4	
6		4		5

×	÷	×	=
* ga ga sa sa	dha-$_2$ sa gasa	mam adhadh	sa^2 dha sa^2 —
व र्णा वी ते	थो ऽ री ऽ	ए का वि ठ	ला ऽ ची ऽ
sa^{2}dh dha-ma	dha- — ma —	ga — sa —	dha-$_2$ — sa —
की र्ति मा न	वा ऽ ची ऽ	सां ऽ गू ऽ	न ऽ ये ऽ

ma ma dh-ma	dha sa^2 dha-sa^2	ma^2 ga^2 sa^2 sa^2	ga^2 — sa^2 —
उ दं डं चि	झा ऽ ले ऽ	ज न्मो नि यां	मे ऽ ले ऽ
ma^2 ga^2 sa^2 sa^2	ga^2 — sa^2 —	sa^{2}dhadh-ma	ga — sa —
हो वो नि यां	गे ऽ ले ऽ	रा ऽ वं ऽ	रं ऽ क ऽ

---

*If all the Alankara notes are removed, Raga Gara assumes this form.

Raga No. 3.

Sa	Ri	Ga	Dha-	Dha
240	250	300	375	400
	5	6		4
	4		6	

×	=	×	÷
dha_2 sa ri sa	ri — ri —	dha- ga ri sa	ri — sa —
ओ ळ खि ला	ह ऽ रि ऽ	ध न्य तो सं	सा ऽ रीं ऽ
ga dha-$sa^2$$sa^2$	ri^2 — sa^2 --	dha- — ri—	ga ri sa —
मो क्ष त्या चे	घ ऽ रीं ऽ	सि ऽ द्धीं ऽ	स हि त ऽ
ga dha-ri^2 sa^2	dha sa^2 ri^2 ga^2	ri^2 — sa^2 --	ga^2 ri^2 sa^2 —
सि द्धि ला वीं	पि सें को ण	त ऽ या ऽ	पु ऽ से ऽ
ga^2 ri^2 sa^2dha	dha- — ga—	ri — sa —	ga ri sa —
ने लें रा ज	हं ऽ सें ऽ	पा ऽ णी ऽ	का ऽ यी

Raga No. 4.

Sa	Ri	Ma-	Ma	Dha	Ni
240	256	320	$341\frac{1}{3}$	384	$426\frac{2}{3}$
	4	5		6	
	6		4		5

×	=	×	÷
ni$_2$ ri ma—	ri — sa —	ri ma-dha—	madha nidha
ಅ ಹ ಕಂ ಽ	ಜಿ ಽ ಸ್ಟ ಽ	ಗರ್ವ ನು ಽ	ರ ಚಿ ಸಿ ದ
ri^2 — sa —	nidhamadha	ma- ri sa sa	ni$_2$ ri sa —
ವೇ ಽ ದಾಂ ಽ	ತ ದೊ ಳ ಗೆ	ಹು ರು ಳಿ ಹು	ತಿ ಹು ದೇ ಽ
m a dha ni sa^2	ri^2 ri^2 sa^{2}sa^2	dhasa^{2}ri^{2}ma-^{2}	ri^2 sa^2 ni sa^2
ಕಾ ಽ ಯ ಕ	ತೊ ಲ ಗಿ ನಿ	ಪ್ಯಾ ಽ ಮಿ ಗ	ಳೆ ನಿ ಸು ತ
m a^2— ri^2 ni^2	ri^2 — sa^{2}sa^2	ri^2 sa^2 ni dha	ma ma- ri sa
ಕಾ ಽ ಯ ಕ	ವಿ ಽ ಲ್ಲ ದ	ಕಾ ಽ ಮಿ ಗ	ಳಾ ಽ ದ ರು

Raga No. 5.*

Sa	Ri	Ma	Dha	Ni
240	$266\frac{2}{3}$	320	400	$426\frac{2}{3}$
	5	6		4
	4		6	

Surawat.

×	÷	×	=
*sa²sa²ni dha	ma ma ri sa	ma — — —	ri — — —
nidhamadha	ma ri ni₂ sa	ni — ma —	ma dhasa²—
sa — ri sa	ni₂ni₂dha₂ma₂	dh₂ma₂dh₂m₂	ma₂ni₂dh₂ma₂
ni₂ ri ma —	ri sa ri sa	ma — ma—	ni dha sa² —
madhanidha	ma dhasa²—	ni ri² ma² —	ri² sa² ri² sa²
ma² ri² ni dha	ma² ri² nisa²	nidhamadha	ma — ri —
ri ma dhadha	madhanidha	madhasa²sa²	ri² ma² ri² sa²
ma²ri² sa² sa²	ma ni dhasa²	ri² sa² ni dha	ma ri sa sa

* Note the rise of the secondary group—Ma Dha Sa.

Raga No. 6.

Sa	Ri	Ma-	Ma	Dha	Ni
240	270	324	337½	405	432
	4		5	6	
	5	6			4

÷	×	=	×
ni_2 ri ma-ma	ri — sa —	ri — ma dha	sa^2 — — —
ಮು ರು ಗ ಲು	ಬೇ ಽ ಡಾ ಽ	ಎಂ ಽ ಬು ವ	ರು ಽ ಽ ಽ
ri ma- ri ma	dhadhasa^2—	nidhamadha	ma- ri sa —
ರ ಮಿ ಸು ವ	ಕಿ ಡಿ ಗೇ ಽ	ಡಿ ಗ ಳು ಜ	ಗ ದೊ ಳು ಽ
ma-rimadha	sa^2 — sa^2 sa^2	ri^2 ri^2 ni sa^2	dha manima-
ಮು ರು ಗು ವ	ಮಾ ಽ ನ ವ	ನ ರು ವ ನು	ತಿ ಳಿ ಯ ದೆ
ni ri^3 ma^2 ri^2	sa^2 — sa^2 —	madhanidha	ma- ri ni_2 sa
ಸು ರಿ ವ ರು	ವೈ ಽ ರಾ ಽ	ಗ್ಯ ದ ನು ಡಿ	ಗ ಳ ನಂ ಽ

Raga No. 7.

Sa	Ri	Ma	Pa	Dha	Ni
240	270	$337\frac{1}{2}$	360	405	450
	4	5		6	
	6		4		5

=	×	÷	×
ri ma dha pa	ni ri^2 sa^2 —	pa ni sa^2 —	pa ri — sa
मू ऽ ड मु	डा ऽ ये ऽ	से ऽ ऽ ऽ	भ ला ऽ ऽ
ma dha— pa	ri — sa —	ni$_2$ sa ri —	pa ri ma dha
को ऽ ऽ अु	बै ऽ ऽ ऽ	कु ए ठै ऽ	जा ऽ य ऽ

madhadhapa	sa^2 ri^2 sa^2—	pa ni sa^2 —	ri^2 sa^2 ni pa
त ब भे ऽ	हूँ ऽ ऽ ऽ	मु ड ती ऽ	र हूँ ऽ ऽ,
pa ri — —	sa^2 ni ma pa	ri^2 ni dha pa	ma ri sa —
से बैं ऽ ऽ	स र ग को	जा ऽ ऽ ऽ	ऽ ऽ य ऽ

The next Raga in order will be the normal Saranga, with the scale—Sa (240), Ri (270), Ma (324), Pa (360), Ni (432), Ni (450). But one variety of Saranga has its scale as 240, 270, 320, 360, $426\frac{2}{3}$ in which case it will be a Raga of couples.

The next scale in order will consist of the relatives of Ga $284\frac{4}{5}$ which will be an unsuccessful Raga, as none of the notes are within the second degree of relation to Sa.

Raga No. 8.

Sa	Ga	Pa	Dha	Ni
240	288	360	384	432
	4	5		6
5	6		4	

×	÷	×	=
ni pa ga —	pa dha sa^2—	ni pa ga sa	ga — — sa
न मि ळा ऽ	खां व या ऽ	न वा ढों सं	ता ऽ ऽ न
dha$_2$ sa ga sa	ga pa ni pa	ga – sa —	dha$_2$— sa —
प रि हा ऽ	ना रा य ण	कृ ऽ पा ऽ	क ऽ रो ऽ

---

pa dha sa^2 —	dha ni sa^2—	ga^2 ga^2 sa^{2}sa^2	ga^2 — sa^2 —
ऐं ऽ सी ऽ	मा ऽ जो ऽ	वा चा म ज	ह्म ऽ णें ऽ
pa ni sa^2 sa^2	ga^2 — sa^2—	sa^2 ni dha pa	ga — sa —
आ णि क ळा	कां ऽ सीं ऽ	हे ऽ चो ऽ	सां ऽ गे ऽ

Raga No. 9.*

Sa	Ga	Pa	Dha	Ni
240	300	360	375	450
4	5	6		
	4		5	6

Tarana.

—	×	÷	×
ga dha ni sa^2	— ni dha —	pa ga dhapa	ga ga sa sa
ना दिर दिर दी	ऽ र्नी दी ऽ	र्नी ना दिर दिर	तुं द्रि दा नि
sa dha$_2$ sa sa	ga ga sa sa	ga pa dhapa	ga ga sa sa
दा दिर दा नि	दा दिर दा नि	दा दिर दिरदिर	दा दिर दा नि

——|——

ga pa sa^2 —	sa^2 — sa^2 —	ga^2 ga^{2}sa^{2}sa^2	ni pa sa^2 —
दिर दिर तों ऽ	तों ऽ तों ऽ	त न न न	दे रे तों ऽ
pa^2 ga^2 sa^{2}sa^2	ni ni pa pa	ga pa dhapa	ga ga sa sa
त न न न	त द्रे दा नि	दा दिर दिरदिर	दिर दिर दा नि

* This resembles Malashri with Dha (375)

Raga No. 10.

Sa	Ri	Ga	Dha-	Dha	Ni
240	250	300	375	400	450
		4	5		6
	5	6		4	

×	÷	×	=
ga ri sa dha$_2$	sa ri ga –	ni nidha-dha-	ga — — —
ಹ ರ ಕೆ ಯ	ಹ ಣ ವು ಽ	ದು ರು ಳ ೦	ಗೆ ಽ ಽ ಽ
sa^2 dha ri^2 sa^2	dha- dh-ga—	ri sa ri sa	ga ga ri sa
ಪ ರ ಜ ಗ	ದೊ ಳ ಗೆ ಽ	ಚ ಲು ವ ಣೆ	ಯಿ ಹು ದೇ ಽ
ga dha- ni sa^2	ri^2 — sa^2 sa^2	ga^2 ga^2 ri^{2}sa^2	ga^2 ri^2 sa^2 sa^2 =
ಮ ರು ಳ ನು	ಸಂ ಽ ಕ ಟ	ದೊ ಳಿ ರ ಲು	ದು ರು ಳ ರು
ri^2 sa^2 dha —	ni dha- ga—	ri^2 sa^{2}ni dha-	ga ri sa sa
ದು ರ ಬೋ ಽ	ಧೆ ಯ ಮಾ ಽ	ಡೆ ಳಿ ವ ರು	ಹ ಣ ವ ನು.

Raga No. 11.*

Sa	Ri	Ga	Pa	Dha
240	250	300	360	400
4		5	6	
	5	6		4

×	÷	×	=
ga pa ga sa	dha$_2$ sa ri ga	pa — ga ri	ga — — —
ಸ್ಥಾ ಽ ನ ಮಾ	ಽ ನ ಗ ಳು	ಬೇ ಽ ಡೆ ನು	ತಾ ಽ ಽ ಽ
dhadha pa ga	dha — ga ri	ga — ri sa	dha$_2$ sa ri sa
ಸ ಕ ಲ ರಿ	ಗಿ ಽ ತ ಲು	ಮೇ ಽ ಲ ಕೆ	ಕು ಳಿ ತ ರು

ga pa sa^2 sa^2	dha sa^2 ri^2—	ga^2 — ri^2 sa^2	ri^2 ri^2 sa^2 sa^2
ಉ ರು ಳಿ ಸು	ವ ನು ಬೇ ಽ	ರೋ ಽ ರ್ವ ನು	ಕ್ಷ ಣ ದೊ ಳು
ga^2 ri^2 sa^2 dha	ga pa sa^2 sa^2	ri^2 sa^2 dha pa	ga ri sa —
ನೆ ಲೆ ಸು ವ	ನೆ ಲ ದೊ ಳು	ತು ಳಿ ಸಿ ಕೊ	ಳ್ಳು ವ ನು ಽ

---

* This is Bibbas of one school; but therein Ri is 256.

Raga No. 12.

Sa	Ri	Ma	Dha-	Dha
240	256	320	384	400
6		4		5
	4	5	6	

×	=	×	÷
ri ma dha- —	ma ri — sa	sa dh_2— ma_2	dha-$_2$sa — sa
क ल्प ना ऽ	अ वि ऽ द्या	त णें ऽ झा	ला जी ऽ व
ri ma — —	ri — sa ma	dhasa^2—dha	dha- ma ri sa
मा यो ऽ ऽ	पा ऽ धि शि	व बो ऽ लि	जे ऽ ती ऽ
mamadhama	dha- —sa^2—	ri^2 — sa^2 —	ma^2— ri^2 sa^2
जी व शि व	दो ऽ नी ऽ	ह ऽ ऽ रि	रू ऽ ऽ पीं
dha-ma ri sa	ri madha- —	sa^2 dhama —	ri — dha-$_2$sa
सिं धु तो अ	भं ऽ ग ऽ	ने ऽ णे ऽ	ह ऽ रि ऽ

Raga No. 13.

Sa	Ri-	Ri	Ma	Dha	Ni
240	256	$266\frac{2}{3}$	320	384	$426\frac{2}{3}$
	4		5	6	
		5	6		4

÷	×	=	×
ni ma ri sa	ri- ma dha—	ma ma ri- sa	dha$_2$— sa —
न ला ग ती	सा ध नें ऽ	वा यां च्चि वं	ध ऽ नें ऽ
ri ma ri- ma	dha— ma—	ni — dha—	ma ri- sa —
ए का ना में	हो ऽ णों ऽ	च ऽ तु ऽ	भुं ऽ ज ऽ
madhanidha	sa^2 — sa^2—	dhasa^{2}ri-^{2}ma^2	ri^2 — sa^2 —
ना मा ह्म णे	थो ऽ र ऽ	ना म चि आ	धा ऽ र ऽ
ni ri^2 ma^2 ri^2	ri-^{2} — sa^2—	dha— ma—	ri- — sa —
वै कुं ठीं बि	ऱ्हा ऽ ड ऽ	त ऽ यां ऽ	भ ऽ क्तां ऽ

Raga No. 14.

Sa	Ri	Ma	Dha	Ni
240	270	$337\frac{1}{2}$	405	450
	4	5	6	
		6		4

×	=	×	÷
ni$_2$ sa ri ri	mama dha—	ri^2 ni dha ma	ri — sa —
शु क्ति व री	र ज त ऽ	पा ह तां ऽ	दि ऽ से ऽ
ma dha ni sa^2	ri^2 ni dha —	ma dha mari	ma ri ni$_2$ sa
र ज्जू व री	भा ऽ से ऽ	मि ऽ थ्या ऽ	स ऽ पें ऽ
	——	——	
ma dhanidha	ri^2 — sa^2 –	ri^2 ma^2 ri^2 sa^2	ri^2 ni dha —
क्षे त्र क्षे त्र	ज्ञा ऽ तें ऽ	जा ण ता तो	ज्ञा ऽ नीं ऽ
ma^2 ri^2 ni sa^2	ni — dha —	sa^2 ni dhama	ri — sa —
ए क ज ना	दें ऽ नीं ऽ	ह ऽ रि ऽ	बो ऽ ला ऽ

The note $341\frac{1}{3}$ does not provide a scale good enough for a Raga

Raga No. 15.

Sa	Ri	Ga	Pa	Ni-	Ni
240	270	288	360	432	450
	6		4		5
		4	5	6	

×	÷	×	=
pa ni ri^2 sa^2	ni- pa ga ri	ni-$_2$ sa ri ga	pa — — —
न ल गे हे	म ज तु झें	व्र ऽ ह्म ऽ	ज्ञा ऽ ऽ न
pa ni- pa ni	sa^2 ri^2 sa^2—	ni- — pa —	ga — sa —
गो जी ले न	गु ऽ ण ऽ	रू ऽ प ऽ	पु ऽ रे ऽ
pa pa ni ni	ri^2 — sa^2—	ri^2 ga^2 ri^2 sa^2	ni- ni- pa—
ला . ग ला उ	शी ऽ र ऽ	प ति त पा	ऽ व ना ऽ
ṇi pa ni- pa	ga ri sa —	ri^2 sa^2 ni pa	ga ri sa —
वि स रो नि	व च नां ऽ	गे ऽ ला ऽ	सी ऽ या ऽ

The next Raga in order will be Hansadhwani.

Raga No. 16.

Sa	Ga-	Ga	Pa	Ni
240	288	300	360	432
4		5	6	
	4		5	6

×	=	×	÷
ni$_2$ sa ga- sa	pa — ga —	ni pa ga- sa	ga — — sa
ज न्मा चैं तें	मू ऽ ळ ऽ	पा ही लें शो	धू ऽ न ऽ
ni pa ni sa^2	pa — ga —	ni — pa —	ga- — sa—
दुः खा सी का	र ऽ ण ऽ	ज ऽ न्म ऽ	घ्या ऽ वा ऽ
	——	——	
ga pa sa^2 sa^2	ni sa^2 ga-^{2}sa^2	ga^2 ga^2 sa^{2}sa^2	ga-^{2} — sa^2 —
पा प पु ण्य	क रु नी ऽ	ज न्मा ये तो	प्रा ऽ णी ऽ
pa ni sa^2 sa^2	ga^2 ga^2 sa^2—	ni — pa —	ga- — sa —
न र दे हा	ये ऊ नी ऽ	हा ऽ नि ऽ	के ऽ लो ऽ

Raga No. 17.

Sa	Ri	Ga	Dha	Ni
240	250	300	375	450
		4	5	6
	4		6	

×	=	×	÷
ga dha ni sa^2	dha — ga—	ri ri sa sa	ri — sa —
आ पु लि या	घ ऽ रीं ऽ	क ए त री	क ऽ री ऽ
ga dha ni sa^2	ri^2 — sa^2 —	dha — ga—	ri dha sa--
आ णो नी घा	ग ऽ री ऽ	तं ऽ गो ऽ	द ऽ क ऽ

ga dha ni sa^2	ni dha ga^2—	ga^2 ri^2 sa^2 sa^2	ri^2 — sa^2 —
क रो नी वि	नं ऽ ती ऽ	वि न वि तों	तु ऽ ह्मां ऽ
ga^2 ri^2 sa^2 sa^2	ni dha ga —	ri — sa —	ga ri sa —
स्ना न पु रु	षो त्त मा ऽ	क ऽ रा ऽ	वे ऽ गीं ऽ

Raga No. 18.

Sa	Ri	Ga	Ma	Dha
240	256	288	320	384
5		6		4
	4		5	6

×	÷	×	=
dha_2— sa ri	ga—ma dha	sa^2—dha ma	dha — ri sa
ಮಾ ಽ ನ ವ	ಗೆ ಽ ಮ ರ	ಣಾ ಽ ಯಾ ಽ	ಕೆ ಽ ಽ ಽ
sa^2 — ri^2 sa^2	ma—dha ma	$ri^2 sa^2$ dha ma	ri — sa —
ಮಾ ಽ ನ ವ	ನಿ ಽ ರ್ಮಿ ತ	ದೇ ಽ ವ ನಿ	ಗಿ ಽ ಲ್ಲಾ ಽ

———

ma dha sa^2—	ri^2 — sa^2 sa^2	dha— sa^2 sa^2	ga^2 - sa^2 sa^2
ಏ ನಿ ತೋ ಽ	ದೇ ಽ ವ ರು	ಆ ಽ ದ ರು	ಹೋ ಽ ದ ರು
dha $sa^2 ri^2 ma_2$	ga^2 - ri^2 sa^2	sa^2dha maga	ri ri sa —
ಮಾ ಽ ನ ವ	ಸೃ ಽ ಖಿ ಲೆ	ಹ ರಿ ಯು ದ	ಲಿ ಹು ದು ಽ

Raga No. 19.

Sa	Ri	Ga	Ma	Dha
240	250	300	320	400
	5	6		4
6			4	5

×	÷	×	=
dha₂ sa ri sa	ga ma dha—	ma dha sa²—	dha— — —
दिर दिर दा नि	त द्रि तॉं ऽ	दिर दिर तॉं ऽ	तॉं ऽ ऽ ऽ
dhadh mama	ri ri sa sa	ma ga ri sa	ga ri sa sa
त न न न	द द्रे दा नि	दिर दिर दा नि	दा नि दा नि
gamadhadha	sa² — sa² —	ri² ri² sa² sa²	ga² ga² ri² sa²
त न न न	तॉं ऽ तॉं ऽ	त न न न	त द्रे दा नि
ma² ga² ri² sa²	ri² sa² dha—	gama dhadh	ma ga ri sa
दिर दिर दा नि	त द्रि तॉं ऽ	त न न न	त द्रे दा नि

Raga No. 20.

Sa	Ṙi-	Ri	Ga	Dha
240	250	$266\frac{2}{3}$	300	400
	5		6	4
		4		6

×	÷	×	=
ga ri ga ri-	dha$_2$— sa ri	ga ga ga ri	dha — — —
ಶ್ರೀ ಽ ಸ್ತೈ ಽ	ಯೆ ಽ ನ್ನ ವ	ಜ ನ ರಿ ವ	ರು ಽ ಽ ಽ
sa^2— dhaga	— ri sa̤ —	ga— ri- sa	— dha$_2$ sa sa
ಓ ಽ ವರ್ ನಂ	ಽ ಡು ಽ ಮ	ತ್ತೋ ಽ ವರ್ ತೇ	ಽ ಗಿ ದ ರೆ
dha sa^{2}ri-^{2}ga^2	sa^2 sa^2 ri-^{2} sa^2	ga^{2}ri-^{2}dhasa^2	ri^2 — sa^2 sa^2
ಒ ಡೆ ಯ ನ	ಒ ಡ ಲ ನು	ತಿ ಳಿ ಯು ತ	ಪೇ ಽ ಕ್ಷ ರು
ga— ri ri-	sa — dh$_2$ sa	dha— ga—	ri- — sa —
ಕೋ ಽ ಣ ಪು	ಹಿಂ ಽ ಡು ವ	ದೇ ಽ ನೆಂ ಽ	ದು ಽ ಽ ಽ
dha — ga ri	ri- ri- ga —	dha sa^2 ri^2—	ri-^{2} — sa^2 —
ಹಾ ಽ ಲು ಪೊ	ಸ ರು ಮು ಽ	ಜ್ಜಿ ಗೆ ಯೆಂ ಽ	ದು ಽ ಽ ಽ
ga — ri ga	ri- — sa —	dha$_2$ sa ri –	dha$_2$ — sa —
ಸ ಽ ತ್ವ ದ	ಸಂ ಽ ಶೋ ಽ	ಧ ನೆ ಯಿ ಽ	ಲ್ಲಾ ಽ ಽ ಽ
dha— sa^2 ri^2	ga^2—sa^2 ri-^{2}	ga^2 ri^2 sa^2—	dha — sa^2—
ಸ ಽ ತ್ವ ದ	ಸಂ ಽ ಗ ತಿ	ತ ಮ ಗಿ ಽ	ಲ್ಲಾ ಽ ಽ ಽ
ga^2— ri^2 ri-^{2}	—sa^{2}dha sa^2	sa^{2}dha ga ri	ri- — sa —
ಸ ಽ ತ್ಯ ನಿ	ಽ ತ್ಯ ನ ನು	ಕಾ ಽ ಣು ವ	ರೆಂ ಽ ತು ಽ

The next scale in order—Sa (240) Ri ($226\frac{2}{3}$) Ma (320) Dha (400)— will be a diminitive Raga.

Raga No. 21.

Sa	Ri	Ga	Ma	Dha
240	270	$303\frac{3}{4}$	$337\frac{1}{2}$	405
	4		5	6
		6		4

×	÷	×	=
ri ga ma ga	ri — sa —	ri^{2}sa^2 dha ma	dha— sa^2 —
क ल्प ने पा	सू ऽ र्नी ऽ	क ल्पि ला जो	ठे ऽ वा ऽ
ma ga ri ga	dha - ma—	ga — ri —	dha$_2$ ri sa—
ते णें प डे	गो ऽ वा ऽ	ने ऽ णें ऽ	ह ऽ रि ऽ

———

dha sa^2 ri^2 sa^2	ga^2 — ri^2 —	dha ri^{2}dhasa^2	ri^2 — sa^2 —
दि ध ल्या वां	चु ऽ नि ऽ	फ ळ प्रा प्ति	कैं ऽ ची ऽ
ma^2 ga^2 ri^2 sa^2	dha — sa^2 —	sa^{2}dha maga	ri — sa —
इ च्छा क ल्प	ने ऽ ची ऽ	व्य ऽ र्थ ऽ	बा ऽ पा ऽ

———

Raga No. 22.

Sa	Ri-	Ri	Ma-	Ma	Ni
240	256	$266\frac{2}{3}$	320	$341\frac{1}{3}$	$426\frac{2}{3}$
		5	6		4
	6			4	5

×	÷	×	=
ma_2 ni_2 ri- sa	ni_2 ri ma- —	ri ma- ri sa	ni_2 — sa —
इ च्छा वे त	ज व ळी ऽ	ह री चे च	र ऽ ण ऽ
sa ri ma-ma	ri- — sa —	ni — ma- —	ri — sa —
स वै ना रा	य ऽ ण ऽ	दे ऽ तो ऽ	तु ऽ ज ऽ

———

ma ni ri-^{2} sa^2	ma-^{2} — ri^2 —	ni ri^2 ma-^{2} —	ri-^{2} — sa^2 —
न सु टे क	ल्प ऽ ना ऽ	मा ना ची ऽ	गां ऽ ठीं ऽ
ma^2 ma-^{2} ri-^{2} sa^2	ri^2 — sa^2 —	ni ma ma- ri	ri- — sa —
घे तां ज न्म	को ऽ टी ऽ	ह ऽ रि ऽ	कैं ऽ चा ऽ

———

Raga No. 23.*

Sa	Ri	Ga	Ma	Ni
240	$266\frac{2}{3}$	$284\frac{4}{9}$	320	$426\frac{2}{3}$
	5		6	4
		4		6

×	÷	×	=
ni ma ri sa	ga ma ni ma	ga — ri sa	ni_2 ri ga —
ಪ ರಿ ಕಿ ಸ	ಲಾ ಽ ಗ ದು	ವ ಽ ಕ್ರ ರ	ಚ ರಿ ಶಾ ಽ
ri ma ri ga	sa ri ni_2 sa	ma ma ni ma	sa^2 — ri^2 sa^2
ನು ಡಿ ವ ದೆ	ರ ಡು ಸಾ ಽ	ಲಿ ಗೆ ಸ ಽ	ರ್ಪ ಽ ಲ್ಲ ದೆ

ma ma ni ma	sa^2 sa^2 ri^2 sa^2	ga^2 — ri^2 sa^2	ni ri^2 ma^2 —
ಪ ರ ರ ಸು	ವು ಗಿ ಯು ವ	ಕೋ ಽ ಪ ವ	ವ ರ ದೀ ಽ
ma^2 ga^2 ri^2 sa^2	ni ni sa^2 sa^2	ri^2 sa^2 ni ma	ga — ri sa
ವಿ ಷ ಪ್ರ ರು	ಷ ರ ನೆ ರ	ಬೇ ಽ ಡಾ ಽ	ಬೇ ಽ ಡಾ ಽ

* Meghawari, Adana, and Bageshri contain these groups with other extra notes.

The next scale does not contain notes within the second degree relation of Sa.

The next scale, consisting of the relatives of Ni (432) will form one variety of Dhani.

Raga No. 24.

Sa	Ri	Ma	Pa	Ni
240	270	337$\frac{1}{2}$	360	450
	6		4	5
		6		4

×	÷	×	=
pa — ni ri^2	sa^2 ni ma pa	ma pa ri ri	ni$_2$ — sa sa
मैं ऽ तो ऽ	र हौं ऽ ऽ	श ह र के	घा ऽ ह र
ni$_2$ sa ri —	pa ni ma pa	ma pa ni pa	ri — sa —
मे ऽ री ऽ	पु रि म वा	ऽ स मैं ऽ	ऽ ऽ ऽ ऽ

——

ma pa ni sa^2	pa ni sa^2 sa^2	pa ni ri^2 sa^2	ma^2 ri^2 ni sa^2
क है ऽ का	ची ऽ ऽ र	सु नो भा ई	सा ऽ धो ऽ
pa ni sa^2 ri^2	ni pa ma pa	ma pa ni pa	ri — sa —
स ब सां ऽ	सो ऽ की ऽ	सां ऽ ऽ स	मैं ऽ ऽ ऽ

Raga No. 25.

Sa	Ga	Ma	Dha	Ni
240	300	$337\frac{1}{2}$	375	450
	4		5	6
		6		4

Surawat.

×	÷	×	=
ga dha ni dha	ga ma ga sa	ga ma ni dha	ni ni sa^2 —
ni ni dha dha	ni dha ma ga	ma ga ma ga	sa ni_2 sa —
ni_2 dha_2 ga —	ma ga — —	ma dha ni dha	ga — sa —
sa^2 ni sa^2 ni	dha — ga —	ma ga ma ga	ni_2 — sa^2 —
ga dha ni sa^2	ma dha ni sa^2	ga^2 ga^2 sa^2 sa^2	ma^2 ga^2 sa^2 sa^2
ni dha ga^2 —	ma^2 ga^2 — —	sa^2 — sa^2 —	ni dha sa^2 —
ga^2 — sa^2 —	ni sa^2 ga^2 —	dha ni sa^2 ga^2	ma^2 ga^2 ni sa^2
sa^2 ni dha —	ga — ni ma	sa^2 ni dha ma	dha ma ga sa

Raga No. 26.

Sa	Ri	Ga	Pa	Dha	Ni
240	270	300	360	375	450
	6		4		5
		4		5	6

Tarana.

×	÷	×	=
ni_2 ri ga pa	ni dha ga ri	pa ni ri^{2} sa^{2}	ni — — —
ना दिर दा नि	दा दिर दा नि	दा दिर दा मि	तों ऽ ऽ ऽ
ga dha ni sa^{2}	ri^{2} ni pa pa	ni ni dhadha	ga ri sa sa
दा दिर दा नि	दिर दिर दा नि	दिर दिर दा नि	दा दिर दा नि
	——	——	
ga pa sa^{2} sa^{2}	pa ni ri^{2} —	ni sa^{2} ri^{2} sa^{2}	ni dha ga^{2} —
दिर दिर दा नि	त न तों ऽ	त न न न	दे रे तों ऽ
pa^{2} ga^{2} ri^{2} sa^{2}	ni — dha —	sa^{2} ni dha pa	ga ri ni_2 sa
दिर दिर दा नि	तों ऽ तों ऽ	दा दिर दा नि	दिर दिर दा नि

The last note, Atitivra Ni has only two relatives.

CHAPTER VII.

NEW RAGAS OF THREE GROUPS.

Raga No. 1.

Sa	Ga-	Ga	Ma	Pa	Dha·	Dha
240	288	300	320	360	384	400
4		5		6		
5	6				4	
6			4			5

×	÷	×	=
ga pa ga sa	dha-$_{2}$sa ga-sa	ga ma pa dh	sa^{2} dha sa^{2}—
च रि त रा	ऽ म के ऽ	स गु न भ	वा ऽ नी ऽ
ma dhasa^{2}sa^{2}	dha— ma —	ga ga sa sa	ga- — sa —
त र कि न	जा ऽ य ऽ	बु द्धि ब ल	बा ऽ नी ऽ

	—	—	
ma dha sa^{2}sa^{2}	ga^{2} ga^{2} sa^{2}sa^{2}	ga-^{2}ga-^{2}sa^{2}sa^{2}	dh-sa^{2}ga-^{2}sa^{2}
य ह ऽ बि	चा ऽ र जे	च तु र बि	रा ऽ गी ऽ
sa^{2} dhama pa	dha-padh-sa^{2}	dha ma paga	ga- — sa —
रा ऽ म हिं	भ ज हिं त	र क स ब	त्या ऽ गी ऽ

Alaps:-

Ga sa, ma ga sa, pa ma ga sa ga-sa. dha-$_2$ sa ga- sa, ma$_2$ dha$_2$ sa, pa$_2$ dha-$_2$ dha$_2$ sa, ga ma ga sa ga- sa.

Ga ma pa ma ga ga- sa. pa ma ga sa ga- sa, dha- pa ga- sa, dha ma pa ga ga- sa, dha ma dha- pa ma ga ga- sa, dha dha- pa ma ga ga- sa.

Sa^2 dha- sa^2, ga pa sa^2, ma dha sa^2, dha- sa^2 ga-^{2} sa^2, ga^2 sa^2 ma^2 ga^2 sa^2.

Gamaks:-

Pa$_2$ dha-$_2$ dha$_2$ sa, ga ma ga sa, ga ma pa ma ga sa. pa ma ga ga- sa, dha- pa ma ga ga- sa.

Ga ma pa dha sa^2, ga ma pa dha- dha sa^2, ga- ga ma pa dha- dha sa^2, dha dha- pa ma ga ga-ma pa dha- dha sa^2, ma pa dha- dha ga ma pa dha- dha sa^2, sa ga- ga ma pa dha- dha sa^2.

Tans:-

Sa^2 dha dha- pa ma ga ga- sa, ga ma pa dha-pa dha sa^2 sa^2, ga ma pa ma ga ga- sa sa, dha-pa ma ga ma ga ga- sa, sa^2 dha dha- pa ma pa dha- pa, dha- pa ma ga ma ga ga- sa.

Ga ma pa dha- dha sa^2 ga^2 sa^2, ga ma pa dha sa^2 ga^2 ga^2 sa^2, ma^2 ga^2 ga-^{2} sa^2 dha pa ma ga, sa^2 dha dha- pa ma ga ga- sa.

Raga No. 2.

Sa	Ga-	Ga	Pa	Dha	Ni
240	288	300	360	384	432
4		5	6		
5	6			4	
	4		5		6

×	÷	×	=
ni pa ga- sa	dha₂ —sa —	ga pa sa ni	pa — — pa
दे खो नि या	तु ऽ झां ऽ	रू पा चा आ	का ऽ ऽ र
ni ni pa pa	dhapa ga-—	ga — sa —	dha₂sa ga-sa
उ भा क टीं	क ऽ र ऽ	ठ ऽ वो ऽ	नि ऽ या ऽ

pa dha ni dh	sa — sa —	ga ga sa sa	dha sa ga-sa
ते नें मा में	चि ऽ त्त ऽ	हो ते स मा	धा ऽ न ऽ
sa ni dha pa	ga pa sa —	sa ni dha pa	ga ga- sa —
वा स वे च	र ऽ च ऽ	नं ऽ सो ऽ	डा ऽ बे ऽ

Raga No. 3.*

Sa	Ga-	Ga	Pa	Dha-	Dha	Ni
240	288	300	360	375	384	450
4		5	6			
5	6				4	
		4		5		6

×	÷	×	=
ga pa ga sa	dha$_2$saga-sa	ni dha- gapa	ga — — sa
प ऽ क ना	ऽ म हैं ऽ	ज ग त पि	या ऽ ऽ रा
sa^2 ni dha-pa	ga dha-papa	ga pa ga sa	dha$_2$sa ga-sa
प ऽ कै ऽ	का ऽ ऽ ल	स क ल सं	सा ऽ रा ऽ
	——	——	
ga dha- ni sa^2	ga^2 ga^2 sa^2 sa^2	dha sa^2 ga^2-sa^2	ga^2 — sa^2 —
त्रि या ऽ पु	रु ष क छु	क हो ऽ न	जा ऽ ई ऽ
sa^2 ni dha-pa	ga pa ni ni	dha-ga — sa	ga- — sa —
स ऽ वे रू	ऽ प ज ग	र हा ऽ स	मा ऽ ई ऽ

* Dha (375) may be omitted in Tans.

Raga No. 4.

Sa	Ri	Ga-	Ga	Pa	Ḋha-	Dha
240	250	288	300	360	384	400
4			5	6		
5		6			4	
	5		6			4

×	÷	×	=
dha-$_2$sa ga-sa	ga pa ga sa	dha$_2$ sa ri sa	ga — — —
ज ब ज ल	बा ऽ ढ़े ऽ	ना ऽ ऽ घ	में ऽ ऽ ऽ
pa ġa sa —	ga-sadha-$_2$sa	ga ri sa dha$_2$	sa — — —
घ र में ऽ	बा ऽ ढ़े ऽ	दा ऽ ऽ म	दा ऽ ऽ म

dha— sa^2 ri^2	ga^2 ga^{2}ri^2 sa^2	dh-sa^{2}ga-^{2}sa^2	ga^2 — — —
दो ऽ ऊ ऽ	क र न अु	ली ऽ ऽ चि	ये ऽ ऽ ऽ
sa^{2}dhadha- —	pa ga ga- —	ri — — sa	ga — — —
य ह स ऽ	ऽज न को ऽ	का ऽ ऽ म	का ऽ ऽ म

Raga No. 5.

Sa	Ri	Ga-	Ga	Pa	Dha	Ni
240	270	288	300	360	384	450
4			5	6		
5		6			4	
	6			4		5

×	÷	×	=
dha$_2$ sa ga-sa	ga pa ga sa	pa ni ri^3 sa^2	pa ri ga sa
सु ख का ऽ	सा ऽ ग र	शो ऽ ऽ ल	है ऽ ऽ ऽ
ni pa ri pa	ga — sa —	ga- — —sa,	dha$_2$ — —sa
को ऽ इ न	पा ऽ वे ऽ	था ऽ ऽ ह	था ऽ ऽ ह

pa — ni ri^2	sa^2 — — —	dhasa^{2}ga-^{2}sa^2	ga^2 sa^2— —
स ऽ द्द वि	ना ऽ ऽ ऽ	सा ऽ धू ऽ	न हीं ऽ ऽ
ga^2 sa^{2}dhapa	ni pa ga- ri	ga-^{2} ri^2 ni pa	dha pa ga sa
द्र ऽ व्य वि	ना ऽ ऽ ऽ	न हिं ऽ ऽ	सा ऽ ऽ ह

Raga No. 6.

Sa	Ri	Ga-	Ga	Ma	Pa	Dha
240	256	288	300	320	360	384
4			5		6	
5		6				4
	4			5		6

×	÷	×	=
ri ma dha ma	pa — ga sa	dh, sa ga-ga-	sa — — —
जा ळो नि सं	सा ऽ र वै	स लो अं ग	णीं ऽ ऽ ऽ
sa^{2}dha ma dh	ga- — ri sa	ga — pa —	ga — sa —
तु झें ना ही	म ऽ नीं ऽ	मा ऽ न ऽ	सी ऽ हि ऽ

ga ma pa dh	pa dha sa^{2}sa^2	dha sa^{2}ga-^{2}—	ri^2 — ma^2 —
तु का ह्म णें	न को रा गे	जो ऽ वि ऽ	ठ ऽ ल ऽ
ga^2 ga^2 sa^{2}sa^2	ga-^{2} —ri^2 sa^2	sa^{2}dha pa ma	ga ga- ri sa
उ टी दे ई	म ऽ ला ऽ	भे ऽ टी ऽ	आ ऽ तां ऽ

Raga No. 7.

Sa	Ga	Ma	Pa	Dha-	Dha	Ni
240	300	320	360	375	400	450
4	5		6			
6		4			5	
	4			5		6

×	÷	×	−
ga dha-ni sa^{2}	ma dhasa^{2}—	pa ma ga sa	ga — — sa
मु खें गा तो	गी ऽ. त ऽ	वा ज वि तो	टा ऽ ळी ऽ
sa^{2} ni dha-ga	dha pa maga	dha mapa ga	pa ma ga sa
ना. च तो रा	वू ऽ ळि ऽ	प्र ऽ म ऽ	सु ऽ खें ऽ
ma pa dha ni	dha-padh sa^{2}	ga^{2} — sa^{2} —	ga^{2}ma^{2}ga^{2}sa^{2}
तु का ह्म णॅं	म ज तु झॅं	ना ऽ मा ऽ	पु ऽ ढें ऽ
sa^{3} ni dha pa	dha-ni sa^{2}—	sa^{2}nidhadha-	pa ma ga sa
तु ऽ च्छ हि	बा पु डे ऽ	स ऽ क ऽ	ळ ऽ ही ऽ

Raga No. 8

Sa	Ri	Ga	Ma	Pa	Dha
240	250	300	320	360	400
4		5		6	
6			4		5
	5	6			4

×	÷	×	=
dha_2 sa ri ga	pa ga sa —	ga pa madha	sa^2 dha sa^2—
वि टं यो श	री ऽ र ऽ	हो त का वि	पं ऽ त्ति ऽ
dha mapa ga	dha ga ri sa	ga pa madha	sa^2 — ri^2 sa^2
प रि रा हो	चि ऽ त्तीं ऽ	ना ऽ रा ऽ	य ऽ ण ऽ
	——	——	
ma dha $sa^2$$sa^2$	ga^2 ri^2 sa^2 sa^2	ga^2 — ri^2 sa^2	ga^2 — ri^2 sa^2
तु का ह्मणे	ना शि वं त	हे ऽ स क	ळ ऽ ऽ ऽ
$ma^2$$ga^2$$ri^2$ sa^2	ri^2 — sa^2—	sa^2dha pa ma	ga ri sa —
आ ठ वे गो	पा ऽ ळ ऽ	ते ऽ ची ऽ	हि ऽ त ऽ

Raga No. 9.

Sa	Ri	Ga	Ma	Pa	Dha-	Dha
240	256	300	320	360	384	400
4		5		6		
6			4			5
	4		5		6	

×	÷	×	—
ri madha-ma	pa — ga sa	madhasa^{2}dh	sa^2 — — —
स गु ण नि	गु ऽ ण ऽ	ज या चि अं	गें ऽ ऽ ऽ
sa^{2}dha mama	dha-—ma—	ri — sa —	pa ga sa —
तो चि आ ह्मां	सं ऽ गें ऽ	क्री ऽ डा ऽ	क ऽ री. ऽ
	——	——	
madha sa^{2}sa^2	ga^2 — sa^2 —	dh- sa^{2}ri^{2}ma^2	ri^2 — sa^2 —
तु का ह्म णे	आ ऽ ह्मीं ऽ	वि धि चे ज	नी ऽ ते ऽ
ma^2 ga^2 ri^{2}sa^2	ga^2 — sa^2 —	sa^{2}dha dh-pa	ma ga ri sa
स्वयं भू आ	ई ऽ ते ऽ	के ऽ ले ऽ	न ऽ हो ऽ

Raga No. 10.

Sa	Ga-	Ga	Ma	Pa	Dha	Ni
240	288	300	320	360	400	432
4		5		6		
6			4		5	
	4			5		6

×	÷	×	=
madhasa^{2}dh	sa^2 — ni pa	ga- sa — ga	pa — — —
द या ऽ ऽ	कौ ऽ न प	र की ऽ जि	ए ऽ ऽ ऽ
ga pa ga sa	ma dhasa^{2}sa^2	ni — pa ga-	sa — — —
का ऽ प र	नि र द य	हो ऽ ऽ य	हो ऽ ऽ य
ga pa sa^2 —	ma—dha sa^2	ni sa^2 ga-^{2}sa^2	ga^2 — sa^2 —
सां ऽ ईं ऽ	के ऽ स ब	जी ऽ ऽ ब	हैं ऽ ऽ ऽ
ma^{2}ga^{2}ga-^{2}sa^2	ni —dha pa	sa^2 ni dha pa	ma ga ga-sa
की ऽ री ऽ	कुं ऽ ज र	दो ऽ ऽ य	दो ऽ ऽ य

Raga No. 11

Sa	Ga	Ma	Pa	Dha-	Dha	Ni
240	288	320	360	384	400	432
5	6			4		
6		4			5	
	4		5			6

×	÷	×	=
dha-$_2$sa ga sa	ma dha sa^{2}sa^2	ni pa ga sa	ga ga sa—
अ णु रे णु	पा ऽ सु नि	ब्र ऽ ह्मां डिं	भ रि ला ऽ
sa^2 ni dha pa	ni pa ga —	ga — sa—	dha-$_2$— sa—
तो ऽ म्यां ऽ	दे खि ला ऽ	वि ऽ टे ऽ	व ऽ रि ऽ

———

ma dha sa^{2}sa^2	dha-sa^2 ga^2 sa^2	ni sa^2 ga^2 —	ma^2 ga^2 sa^2 —
स्था ऽ व र	जं ऽ ग म	भ रु नीं ऽ	उ र लां ऽ
ma^{2}ga^2 sa^{2}sa^2	ni ni pa —	sa^2 ni dha dh-	pa ma ga sa
तो ऽ म्यां ऽ	दे खि ला ऽ	पं ऽ ढ ऽ	रि ऽ ये ऽ

———

Raga No. 12

Sa	Ri	Ga	Ma	Dha-	Dha
240	256	288	320	384	400
5		6		4	
6			4		5
	4		5	6	

×	÷	×	=
dha-$_2$sa ga-sa	ri ma dha-—	ma ma dh dh	sa^2 dha sa —
वे द शा स्त्र	पु रा, णें ऽ	गा ती ज या	सा ऽ रीं ऽ
sa^2—dha ma	dha- ga ri sa	dha- —ga —	ri — sa —
तो ऽ पुं ड	ली का पा ठीं	उ s भा s	दि ऽ से ऽ

dḥa-sa^{2}ga^{2}sa^2	ri^2 — ma^2—	dha-sa^{2}ri^{2}ma^2	ri^2 — sa^2 —
वे डा व ल्या	इरु ऽ ती ऽ	न क ळे ह्म	ण ऽ ती ऽ
ga^2 ga^2 ri^{2}sa^2	ga^2 — ri^2 sa^2	sa^{2}dhadh-ma	ga ri sa —
तो उ भा श्री	प ऽ ति ऽ	बा ऽ कू ऽ	वं ऽ टीं ऽ

Raga No. 14.

Sa	Ri	Ga-	Ga	Ma	Dha-	Dha
240	250	288	300	320	384	400
5		6			4	
6				4		5
	5		6			4

×	÷	×	=
dha-$_2$sa ga-sa	dha$_2$ sa ri ga	ma dha sa^2—	dha — — —
ಪ ರ ಕ ವಿ	ನಿ ಽ ರ್ಮಿ ತ	ಕ ವ. ನ ವ	ನು ಽ ಽ ಽ
sa^{2}dha madh-	ga- ga- sa sa	dha ga ri sa	ri — sa —
ಕ ದಿ ಯು ತ	ಬ ರೆ ವ ರು	ಕಾ ಽ ವ್ಯ ವ	ನು ಽ ಽ ಽ
ma dha sa^{2}sa^2	ri^2 — sa^2 —	dha ri^2 ga^{2}sa^2	dh-sa^2 ga-^{2}—
ಸ ರ ಸ ತಿ	ಸ್ವಾ ಽ ಯಾ ಽ	ಲ ಯ ದೊ ಳ	ವ ರಿ ಗೆ ಽ
ga^2 ga^2 ri^2 sa^2	dha—ma ma	sa^{2}dhadh-ma	ga ga- ri sa
ಸ ಜೆ ಯ ನು	ಭೋ ಽ ಗಿ ಸ	ಬೇ ಽ ಕಾ ಽ	ಗು ವ ದು ಽ

Raga No. 15.

Sa	Ri	Ga	Ma	Dha-	Dha
240	$266\frac{2}{3}$	288	320	384	400
5		6		4	
6			4		5
	4				6

÷	×	=	×
dha$_2$ sa ri ri	ga— sa dh-$_2$	sa — — —	dha ma ga ri
ಸು ಲ ಲಿ ತ	ಪ ಽ ದ್ಯ ಗ	ಳಾ ಽ ಽ ಽ	ರ ಚಿ ಸು ತ
dhamadh-ma	ga ga ri sa	ga madh-ma	madha sa^2—
ಕಾ ಽ ಲ ವ	ಕ ಳೆ ಯು ವ	ಕ ವಿ ಯಾ ಽ	ಗು ವೆ ನೇ ಽ

ma dha sa^2 ri^2	sa^2 — — —	dha-sa^{2}ga^2—	sa^2 — — .—
ಸಿ ರಿ ಬೇ ಽ	ಡಾ ಽ ಽ ಽ	ಜ ಸ ಬೇ ಽ	ಡಾ ಽ ಽ ಽ.
ma^2 ga^2 ri^2 sa^2	ri^2 sa^{2}dha ma	sa^{2}dhadh-ma	ga ri sa —
ಲೋ ಽ ಗ ರು	ಬೊ ಗ ಳ ಲು	ಬೇ ಽ ಡಾ ಽ	ಬೇ ಽ ಡಾ ಽ

CONNEMARA PUBLIC LIBRARY
20 MAY 1957

Raga No. 16.

Sa	Ri	Ga	Pa	Dha-	Dha
240	250	300	360	375	400
4		5	6		
	5	6			4
	4			6	

×	—	×	÷
ga ri sa dha$_2$	ri — — sa	dha-pa ga ri	ga — ri sa
ना क ळे तें	क ऽ ळे ऽ	क ळे, तें ना	क ऽ ळे ऽ
sa' dha ri' sa'	dha-— ga—	ri — sa —	pa ga ri sa
ध ळे तें ना	घ ऽ ळे ऽ	गु ऽ रु ऽ	वि ऽ णें ऽ

ga pa sa' —	dha ri' ga'—	dha- sa' ri'—	ga' ri' sa' —
नि गुं णीं ऽ	पा ध ले ऽ	स गु णीं ऽ	भ ज तां ऽ
ga' ri' sa' dha	dha- —ga—	pa — ga —	ri — sa —
वि क ल्प घ	रि ऽ तां ऽ	जि ऽ व्हा ऽ	ज्ञ ऽ हे ऽ

Raga No. 17.

Sa	Ri	Ga	Ma	Dha-	Dha
240	250	300	320	375	400
6			4		5
	5	6			4
	4			6	

×	=	×	÷
madha sa²sa²	dha—ma—	dha-ga ri sa	ri — sa —
ओ ळ खि ला	ह ऽ॰ रि ऽ	सां ठ वि ला	पो ऽ टीं ऽ
sa² dha ri²sa²	dhamaga—	dha- — ri—	ga ri sa —
हो तां त्या ची	भे ऽ टी ऽ	दुः ऽ ख ऽ	कैं ऽ चैं ऽ
ga madhasa²	ri² — sa² —	dh· sa² ri²ga²	ri² — sa² —
न र ना ऽ	री ऽ हो ऽ	कां ऽ दु रा	चा ऽ री ऽ
ma²ga² ri²sa²	ga²— ri² sa²	sa²dh dh· ma	ga ri sa —
मु खीं गा तां	ह ऽ रि ऽ	प ऽ चि ऽ	त्र ऽ तो ऽ

Raga No. 18.

Sa	Ri-	Ri	Ga	Dha-	Dha
240	250	266$\frac{2}{3}$	300	375	400
	5		6		4
	4			6	
		4			6

×	=	×	÷
sa^2 dha ga ri	ri- — sa —	ga ri ri- sa	dha-$_2$ — sa —
ह रि बो ला	दे ऽ तां ऽ	ह रि बो ला	घे ऽ तां ऽ
dha$_2$ sa ri —	dh-$_2$ ri- ga —	dha — ga —	ri- — sa —
ह सं तां ऽ	खे ळ तां ऽ	ह ऽ रि ऽ	बो ऽ ला ऽ

---

dha.sa^2 ri^{2}sa^2	dh ri-^{2} ga^2 —	ga^{2}ri-^{2} sa^2 dh	ri^2 — sa^2 —
ह रि बो ला	गा ऽ तां ऽ	ह रि बो ला	खा ऽ तां ऽ
ga^2 ri^2 ri-^{2} sa^2	dh- dh sa^2 —	sa^2 dh dh-ga	ri ri- sa —
स र्व का र्य	क रि तां ऽ	ह ऽ रि ऽ	बो ऽ ला ऽ

Raga No. 19.

Sa	Ri	Ma-	Ma	Dha-	Dha	Ni
240	256	320	$341\frac{1}{3}$	384	400	$426\frac{2}{3}$
	4	5		6		
	6		4			5
6		4			5	

×	÷	×	=
ri ma-dha-—	madh-nidh-	ma-dha sa^{2}—	ri^{2} ri^{3} sa^{2} sa^{2}
ಸು ರ ಸುಂ ಽ	ದ ರಿ ಯ ರು	ಸ್ವ ರ ಸಾ ಽ	ಗ ರ ದೊ ಳು
ma ni ri^{3} sa^{3}	dha—ma-—	dha-ma-ri—	sa ri sạ —
ಸ ರ ಸ ಜ	ಲ ಽ ಕ್ರೀ ಽ	ಡೆ ಯ ನಾ ಽ	ಡಿ ದ ರು ಽ

ma- dh sa^{3}sa^{3}	ni ri^{3}ma^{3}ma^{3}	dha-sa^{2}ri^{3} ma^{3}-	ri^{2} ri^{3} sa^{2} sa^{2}
ಸು ರಿ ದ ವು	ತುಂ ಽ ತು ರ	ಸ ರಿ ಗ ಮ	ಪ ಧ ಗ ಳು
ma^{3}ma-^{3}ri^{3}sa^{3}	ri^{3} ri^{3} sa^{3} sa^{3}	sa^{2} ni dhadh-	ma ma- ri sa
ಹ ರಿ ದ ವು	ಝು ರಿ ಗ ಳು	ರಾ ಽ ಗ ಗ	ಳಾ ಽ ಗ ಽ

Raga No. 20.*

Sa	Ri	Ga	Ma-	Ma	Dha	Ni
240	256	288	320	341$\frac{1}{3}$	384	426$\frac{2}{3}$
	4		5		6	
	6			4		5
5		6			4	

×	÷	×	=
dha$_2$ sa ga sa	ri ma- dha—	ma dhanisa^2	ri^2 — sa^2 —
बै सो नि नि	वां ऽ त ऽ	शु द्ध क री	चि ऽ त्त ऽ
ri ma ni dha	ma- — ri —	ma — ni —	ri^2 — sa^2 —
त या सु खा	अं ऽ त ऽ	पा ऽ र ऽ	ना ऽ हीं ऽ
dhamadhani	ri^2 — sa^2 —	dh sa^2 ga^{2}sa^2	dha ri^{2}ma^2—
ये ऊ नि अं	त ऽ रीं ऽ	रा ही ल गो	पा ऽ ळ ऽ
ma^{2}ma-^{2}ri^{2}sa^2	dha — sa^2—	sa^2 ni dh ma	ma- ga ri sa
सा या सा चें	फ ऽ ळ ऽ	बै ऽ स ऽ	ली ऽ या ऽ

*This is the obsolete Nishadha Grama Raga of Bharata. (See page 13.)

Raga No. 21.

Sa	Ri-	Ri	Ma-	Ma	Dha	Ni
240	256	$266\frac{2}{3}$	320	$341\frac{1}{3}$	384	$426\frac{2}{3}$
	4		5		6	
	6			4		5
		5	6			4

×	÷	×	=
ni ma- ri sa	ri-ma- dha—	ma dha nisa^2	ri^2- — sa^2 —
रा म कृ ष्ण	ह ऽ री ऽ	यु कुं द मु	रा ऽ री ऽ
ri- ma ni dha	ma- —ri- —	ma — ni —	ri^2- — sa^2 —
मं त्र हा उ	च्चा ऽ री ऽ	वे ऽ ळो ऽ	वे ऽ ळां ऽ
ma ni ri-^{2} sa^2	ni ri^2 ma-^{2} —	dhsa^{2}ri-^{2}ma-^{2}	ri^2 — sa^2 —
तु का ह्म णे	ऐ ऽ सें ऽ	दे ई न मी	दि ऽ व्य ऽ
niri-^{2}ma^{2}ma-^{2}	sa^2 ri-^{2} sa^2 —	sa^2 ni dha ma	ma- ri ri- sa
ज री हो ई	ल भा व ऽ	ए ऽ क ऽ	वि ऽ घ ऽ

Raga No. 22.*

Sa	Ri-	Ri	Ma	Dha-	Dha	Ni
240	256	266⅔	320	384	400	426⅔
		5	6			4
		4			6	
	4		5	6		

×	÷	×	=
ni dha— ma	dh- ma ri-sa	ri ma ni dha	ma — ri —
ಅ ನ್ಯ ಽ ತ	ವಾ ಽ ಣಿ ಯು	ಸು ರಿ ಸ ಲು	ಬೇ ಽ ಕು ಽ
ma ni dha sa^{2}	— ri^{2} sa^{2} —	ri^{2}- sa^{2} ni dh-	ma ni dha—
ಸು ಖ ದಿ ಬಾ	ಽ ಳ ಲು ಽ	ಬ ಯ ಸಿ ದ	ವಾ ಽ ಽ ಽ
mama ni dha	sa^{2} sa^{2} ri^{2} sa^{2}	dha-sa^{2} ri^{2}-ma^{2}	ri^{2} — sa^{2} —
ಶು ಭ ಹಿ ತ	ದಿ ಟ ಗ ಳ	ನಾ ಽ ಡ ಲು	ಬೇ ಽ ಕು ಽ
ma^{2} ri^{2} sa^{2} ni	ri^{2}- sa^{2} dh-ma	sa^{2} ni dh dh-	ma ri ri- sa
ಸ ಟಿ ಯಾ ಽ	ದ ರು ಸ ವಿ	ಯಾ ಽ ಡ ಲು	ಬೇ ಽ ಕು ಽ

*Note the rise of the secondary group Ma Dha Sa.

Raga No. 23.

Surawat.

Sa	Ri-	Ri	Ga	Ma	Dha	Ni
240	250	$266\frac{2}{3}$	300	320	400	$426\frac{2}{3}$
		5		6		4
		4			6	
	5		6		4	

×	÷	×	—
dha_2 ri- ga—	ni_2 ri ma —	ri ma dhama	dha— — —
ni ma ri ma	dha ga ri- ga	ni dha maga	ri sa ri- sa
sa^2 ni dha ma	ga ri ga sa	dhama ga sa	ri- sa dh_2 sa
ma dha sa^2—	ni dha madh	ga ri sa ri-	dha_2 — sa—
ma dha $sa^2 sa^2$	dhasa^2 ri-^{2}ga^2	ni ri^2 ma^2 ga^2	ri^2 sa^2 dh sa^2
ga^2 ri^2 sa^2 dh	ri^2 — sa^2 —	ma^2 ri^2 ni dh	madha sa^2—
ri ma ni ma	dh $sa^2 ma^2 ga^2$	ri-^{2} sa^2 dh —	ri^2 — sa^2 —
ma^2 ga^2 $ri^2 sa^2$	ri-^{2} — sa^2 —	sa^2 ni dh ma	ga ri ri- sa

Raga No. 24.

Sa	Ri-	Ri	Ma-	Ma	Dha	Ni
240	256	$266\frac{2}{3}$	320	$341\frac{1}{3}$	400	$426\frac{2}{3}$
		5	6			4
		4			6	
	6			4		5

×	÷	×	=
ma_2 ni_2 ri- sa	ma-$_2$$dh_2$ sa—	ni_2 rima-ma-	ri — sa —
त्रि गु ण आं	ठी ऽ घ ऽ	वा चे चा प	सा ऽ रा ऽ
ni dha ma- ri	ni ma- ri —	ma ma- ri- sa	ri — sa —
प ड ले वि	चा ऽ रा ऽ	स ऽ र्घ ऽ	र ऽ स ऽ

ma ni ri-^{2} sa^2	ma-dhasa^2—	niri^{2}ma-^{2}ma-^{2}	ri^2 sa^2 ri^2 sa^2
आ दि म ध्य	अं ऽ तीं ऽ	ना हीं अ व	सा ऽ न ऽ
ma^{2}ma-^{2}ri-^{2}sa^2	ni dhama——	ri-^{2} ni sa^2 —	ma- ri sa —
जी व नीं ऽ	जी व न ऽ	मि ळु नी ऽ	गे ऽ लॅ ऽ

Raga No. 25.

Sa	Ri	Ma-	Ma	Pa	Dha	Ni-	Ni
240	270	324	$337\frac{1}{2}$	360	405	432	450
	4		5		6		
	5	6				4	
	6			4			5

×	−	×	÷
pa_2 ni_2 ri sa	ri ma- ri sa	ma padhapa	ni pa ma ri
ಸ ರ ಸ ವಿ	ಹಾ ಽ ರ ಸು	ಖ ವ ಬ ಯ	ಸಿ ದ ವ ರು
sa^2 — ni sa^2	ni- — ma ri	ma dhma-pa	ma- ri ni sa
ದೇ ಽ ವ ನ	ನಿ ಽ ರ್ಮಿ ಸಿ	ಲೀ ಽ ಲೆ ನ	ಟಿ ಸಿ ದ ರು
sa^2 — sa^2 ri^2	ni sa^2 ri^2 sa^2	ri^2 ma- $^2ri^2sa^2$	dh ma pa ri
ದೇ ಽ ವ ನ	ಕ ತೆ ಯ ನು	ದ ನಿ ಯ ಲಿ	ನು ಡಿ ದ ರು
pa ni sa^2 sa^2	ni- pa sa^2 ri^2	ri^2ri^2 ma-$^2ma^2$	ri^2 ri^2 sa^2 sa^2
ಕ ತೆ ಯ ದು	ಮೂ ಽ ರ್ತಿ ಸಿ	ಧ ಽ ಮ ವು	ನೆ ಲೆ ಸಿ ತು
ni- pa dha pa	ma pa ma-ri	ni ni- dh pa	ma ma- ri sa
ಜ ನ ಮ ನ	ಕೆ ಳೆ ಯಿ ತು	ಕ ನ ಸಿ ನ	ಕ ತೆ ಯ ದು

Raga No. 26.*

Sa	Ri	Ma-	Ma	Dha	Ni	Ni
240	270	324	337½	405	432	450
	4		5	6		
	5	6			4	
			6			4

×	÷	×	=
ma-ri ma dh	ni- dha ni sa²	sa² sa² ni sa²	ri² ni sa² —
ह रि ना ऽ	मा ऽ मृ त	से वी सा व	का ऽ श ऽ
ri² ni- dhasa²	ni- ma- ri —	ri ma-ri ma-	ri ni₂ sa —
मो क्ष त्या चे	भू ऽ स ऽ	द ऽ ष्टी ऽ	पु ऽ ढें ऽ
ma dhani sa²	dha ni- sa² —	ni- ri² ma-²ri²	sa² ri² sa² —
नि त्य ना म	घो ऽ ष ऽ	ज या चे मं	दि ऽ रीं ऽ
ma² ri² ni-sa²	ri² ni sa² —	ma dh ma-ri	ma- ri sa —
ते चि का शीं	पु ऽ री ऽ	ती ऽ र्थं ऽ	क्षे ऽ त्र ऽ

*Ri (270) is on the border line between the first and second degrees of relation to Sa. Although the normal Ri stands in the second degree, as a result of the overtone of the 9th segment, it bears the first degree of relation to Sa; and its relatives will stand in the second degree. That is why Raga Nos. 26 and 27, and No. 6 of two groups are successful.

Raga No. 27.

Sa	Ri	Ga	Ma-	Ma	Dha	Ni
240	270	$303\frac{3}{4}$	324	$337\frac{1}{2}$	405	432
	4			5	6	
	5		6			4
		6			4	

×	÷	×	−
ri ma dha.dh	gama-dha—	ni ma- ri ma	dha — —sa^{2}
रा म कृ ष्ण	ना ऽ म ऽ	मा ळ हीसा	जि ऽ री ऽ
ri^{2} sa^{2} ni dha	ma- ga.ri —	ma ga ri sa	ri — sa —
ओं त्रि ली गो	जि ऽ री ऽ	क ऽ णीं ऽ	म ऽ नीं ऽ
ga madhma-	dha ni ri^{2} sa^{2}	ni ri^{2} ma^{2} ga^{2}	ri^{2} — sa^{2} —
तु का ह्म ण	त ऽ नु ऽ	ज्ञा ली ही शी	त ऽ ळ ऽ
ma-^{2} ri^{2}ma^{2}ri^{2}	ni dha sa^{2} —	ni dhama dh	ga ma- ri sa
आ व डी स	क ऽ ळ ऽ	ग्र ऽ ल्ला ऽ	नं ऽ दें ऽ

Raga No. 28.

Sa	Ri	Ga	Ma-	Ma	Pa	Dha	Ni
240	270	288	324	337½	360	405	432
	4			5		6	
	5		6				4
		4			5		6

×	=	×	÷
ri ma dha pa	ni pa ga—	ni pa ma- ri	sa ri sa —
ह रि ते थें	सं ऽ त ऽ	सं त. ते थें	ह ऽ रि ऽ
ni_2 sa ri ga	ma- —ri —	ma —dha—	pa ni sa^2 —
ऐ सें वे द	चा ऽ री ऽ	बो ऽ ल ऽ	ता ऽ ती ऽ

ma dha sa^2ri^2	ni ri^2 $ma\text{-}^2$—	ri^2 $ma\text{-}^2ga^2ri^2$	ni — sa^2 —
ब्र ह्मा डो ळ	सा ऽ तें ऽ	वे दा र्थ ना	क ऽ ळे ऽ
$ma\text{-}^2ga^2ri^2$ sa^2	ni — pa —	ni dha pama	ma- ga ri sa
ते थें हे आं	ध ऽ ळे ऽ	व्य ऽ र्थ ऽ	हो ऽ ती ऽ

Raga No. 29.

Sa	Ri	Ga	Ma	Pa	Dha	Ni-	Ni
240	270	288	337½	360	405	432	450
	4		5		6		
	6			4			5
		4		5		6	

×	÷	×	=
ri ma dha pa	ni ri² sa² sa²	ni- pa ga ri	pa — — —
ಸ ಕ ಲ ವು	ಸ ಕ್ಕ ಲ ರಿ	ಗೆಂ ಽ ಬು ವ	ರು ಽ ಽ ಽ
sa² ni- pa —	ga — ri sa	dha pamapa	ri ni₂ sa —
ತ. ನು ಗಿ ಽ	ಲ್ಲೆ ಽ ಬು ದ	ನ ರು ಹು ವ	ರು ಽ ಽ· ಽ

———

pa — ni ri²	ga² ri² sa² sa²	ma² ga² ri² sa²	ni- sa² ga² sa²
ಆ ಽ ಶೆ ತ	ಕೆ ದು ಪ ರ	ಕಾ ಽ ಶಿಂ ಯು	ಮಾ ಽ ಳ್ಪ ರು
ga² ri² sa² ni-	pa ni ri² —	ni ni- dh pa	ma ga ri sa
ಸ್ವಾ ಽ ರ್ಥ ದ	ಚ ಽ ಲ್ಲಾ ಽ	ಟ ವಿ ದೆ ಽ	ಲ್ಲಾ ಽ ಽ ಽ

———

Raga No. 30.

Sa	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	270	300	$337\frac{1}{2}$	360	375	405	450
	4		5			6	
	6			4			5
		4			5		6

×	÷	×	=
ri ma dha pa	ga dha-ni sa^2	pa ni ri^2 sa^2	ni — pa —
स त्प द तें	ब्र ऽ ह्म ऽ	चि त्पं द ते	मा ऽ या ऽ
ni dha- ga pa	ni ri^2 sa^2 —	dha pa ma pa	ri — sa —
आ ऽ नं दें	ज ऽ या ऽ	ल ण ती ऽ	ह ऽ रि ऽ

——

ga dha-ni sa^2	pa ni ri^2 sa^2	madhamapa	ni ri^2 sa^2 —
स त्प द नि	र्गु ऽ ण ऽ	चि त्प द स	गु ऽ ण ऽ
ma^2 ga^2 ri^2 sa^2	ni — pa —	ni dh dh- pa	ma ga ri sa
स गु ण नि	र्गु ऽ ण ऽ	ह ऽ रि ऽ	पा ऽ यीं ऽ

Raga No. 31.

Sa	Ri	Ga	Ma	Pa	Ni-	Ni
240	270	288	324	360	432	450
	5		6		4	
	6			4		5
		4		5	6	

×	÷	×	=
ni- pa ga ri	pa ni ri^2 sa^2	ni pa ma ri	pa — — —
ना दिर दा नि	दिर दिर तों ऽ	दा दिर दा नि	तों ऽ ऽ ऽ
ri ma ni- pa	ni pa ri ma	ga pa ni- pa	ga ri sa sa
दिर दिर तों ऽ	त द्रि तों ऽ	दा दिर दा नि	दिर दिर दानि

pa ni ri^2 sa^2	ni- sa^2 ga^2—	ni- ri^2 ma^2 ri^2	ni sa^2 ri^2 sa^2
त न न न	त द्रि तों ऽ	नादिर दिरदिर	दा नि तों ऽ
ma^2 ga^2 ri^2 sa^2	ni pa ni- pa	sa^2 ni ni- pa	ma ga ri sa
दिर दिर दा नि	तों ऽ तों ऽ	दा दिर दा नि	दा दिर दा नि

Raga No. 32.

Sa	Ri	Ga	Ma	Pa	Dha	Ni-	Ni
240	270	300	324	360	375	432	450
	5		6			4	
	6			4			5
		4			5		6

×	–	×	÷
ga dha ni pa	ri ma pa —	ni- pa ma ri	sa ri sa —
ना दिर दा नि	त ाद्रि तों ऽ	तों ऽ त न	दे रे ना ऽ
ni-, sa ri ma	ga sa ri pa	ni dha — ga	ma ga ri sa
[illegible] न न न	दे रे तों ऽ	दिर तों ऽ न	दे रे दा नि

ga dha ni sa^{2}	pa ni ri^{2} sa^{2}	ni sa^{2}ri^{2} ma^{2}	ri^{2} ri^{2} sa^{2} sa^{2}
दिर दिर तों ऽ	त न तों ऽ	त न न न	त द्रे दा नि
ma^{2}ga^{2}ri^{2} sa^{2}	ni pa ni- pa	dha pa ga ri	ma ga ri sa
दिर दिर दा नि	दा नि दा नि	दिर दिर दा नि	दा दिर दा नि

Raga No. 33.

Sa	Ri	Ga	Pa	Dha	Ni-	Ni
240	270	288	360	384	432	450
5		6		4		
		4	5		6	
	6		4			5

×	÷	×	−
pa ni ri^2 sa^2	ni- pa ga —	sa dha, sa ri	ga — ga —
ह रि प द	प्रा ऽ प्ति ऽ	भो ळ्या भा वि	कां ऽ सी ऽ
ga pa ni- pa	ni ri^2 sa^2 —	dha pa ga sa	ga — sa —
अ भि मा नि	यां ऽ सी ऽ	न र क ऽ	वा ऽ स ऽ

dha sa^2 ga^2 sa^2	ni- sa^2 ga —	pa ni ri^2 sa^2	ga^2 — sa^2 —
अ स्ति भा ति	प्रि ऽ य ऽ	ए सीं प दें	ती ऽ नीं ऽ
ga^2 ri^2 ni sa^2	ni- — pa —	ni ni- dha pa	ga ri sa —
ए का ज ना	दे ऽ नीं ऽ	तें ऽ चि ऽ	ज्ञा ऽ लें ऽ

Raga No. 34.*

Sa	Ri	Ga	Pa	Dha-	Dha	Ni
240	250	300	360	375	400	450
		4		5		6
	5	6			4	
4		5	6			

×	=	×	÷
pa$_2$ dha$_2$ sa ri	ga — — —	ga dha-ni pa	ga pa ga sa
ಸ್ವ ಽ ರ್ಗ ಸು	ಖಾ ಽ ಽ ಽ	ಮ ನ ದ ಮ	ನೀ ಽ ಪಾ ಽ
ga dha-ni sa^2	ri^2 sa^2 ni dha	ni dha-pa ga	pa ga ri sa
ಮ ರ. ಣಾಂ ಽ	ತ ರ ದೊ ಳು	ಲ ಭಿ ಸು ವ	ದ ನು ಚಿ ತ

———

ga — pa sa^2	dha sa^2 ri^2 ga^2	ni — dh- ga^2	ga^2 ri^2 sa^2 —
ಇಂ ಽ ದ್ರಿ ಯ	ಮ ನ ಗ ಳು	ನೀ ಽ ಗ ದ	ಮೇ ಽ ಲೆ ಽ
ga^2 ri^2 sa^2 dh	ni dha-pa ga	dha — ga ri	— ga ri sa
ಈ ರ ಗ ದ	ಸು ಖ ಗ ಳ	ನಾ ಽ ರು ಭೋ	ಽ ಗ ಪ ರು

*This is Bibbas of one school; but Dha (375) is absent.

Raga No. 35.

Sa	Ga-	Ga	Pa	Dha	Ni-	Ni
240	288	300	360	375	432	450
4		5	6			
		4		5		6
	4		5		6	

×	÷	×	—
ga dha ni sa^2	ni- pa ga- —	sa sa ga ga	pa — — —
भ ग धं त	जा ऽ ण ऽ	त्या च ज व	ळी ऽ ऽ ऽ
ga- pa ni- pa	ni dha ga —	pa ga sa sa	ga- — sa —
जै सी गं गा	धा ऽ हे ऽ	ते सें त्या घें	म ऽ न ऽ

ga pa sa^2 sa^2	ni dha ga^2 —	ni-sa^2 ga-^{2}sa^2	ga^2 — sa^2 —
स्या घे ज व	ळी दे व ऽ	भ क्ति भा वें	उ ऽ भां ऽ
pa^{2}ga^2 ga-^{2}sa^2	ga-^{2} — sa^2 -	sa^2 ni ni-dha	pa ga ga- sa
स्वा नं दा चा	गा ऽ भा ऽ	त ऽ या ऽ	दि ऽ से ऽ

Raga No. 36.

Sa	Ga	Ma	Pa	Dha	Ni
240	300	337½	360	375	450
4	5		6		
	4			5	6
		6			4

×	÷	×	=
pa ma ga ga	dha ni sa'sa'	ni pa ma pa	ga — — —
सं ता ला उ	म ऽ जे ऽ	आ ऽ त्म सु	ख ऽ ऽ ऽ
sa' ni dha pa	ni pa ma pa	ma pa dha pa	ga — sa —
ज्या ची त्या ला	प द वी ऽ	इ त रां न	सा ऽ जे ऽ
ga ma pa dha	ni — sa' —	ni dha ga'sa'	ga' — sa' —
आं त्म सु ख	ध्यां ऽ रे ऽ	खो ला ज्ञा न	दृ ऽ ष्टी ऽ
ma'ga' sa'sa'	ni — pa —	sa' ni dha pa	ma ga sa —
या वी ण चा	व ऽ टी ऽ	क ऽ रूं ऽ	न ऽ का ऽ

Raga No. 37.

Sa	Ri	Ga	Ma	Dha-	Dha	Ni
240	250	300	320	375	400	450
		4		5		6
	5	6			4	
6			4		5	

×	÷	×	=
ga dha-ni sa^2	ma dhasa^2 —	dha ga ri sa	ga — — —
पा य न ठे	वा ऽ•वा ऽ	आ ड मा ऽ	गीं ऽ ऽ ऽ
dha$_2$ sa ri ga	dha-ni dh-ga	ma dhasa^{2}sa^2	ma ga ri sa
अ ह र्निं शीं	स र्व का ळ	प र मा र्थे	क रा वा ऽ
ga dha-ni sa^2	ma dhasa^{2}sa^2	dha ri^2 ga^2 —	ga^2 ri^2 sa^2 —
आ ड मा गीं	को णी ज न	जे ऽ जा ऽ	ती ऽ ल ऽ
ma^{2}ga^2 ri^2 sa^2	ga^2 — sa^2 —	sa^2 ni dh dh-	ma ga ri sa
त्यां तु ती का	ढी ऽ ल ऽ	तो ऽ चि ऽ	ज्ञा ऽ नी ऽ

Raga No. 38.

Sa	Ri-	Ri	Ga	Dha-	Dha	Ni
240	250	$266\frac{2}{3}$	300	375	400	450
			4	5		6
	5		6		4	
		4			6	

×	=	×	÷
ga dha-nisa^{2}	dha— ri^{2} sa^{2}	dha ga ri- sa	ga — ga —
घ रू नि के	श ऽ व ऽ	आ णा ·भा व	व ऽ ळॅ ऽ
dha$_{2}$sa ri- ga	dha$_{2}$ ri ga —	ni dha- ga —	ri- — sa —
पा पि यां न	क ऽ ळे ऽ	कां ऽ हीं ऽ	के ऽ ल्या ऽ
ga dha-ni sa^{2}	ri^{2} sa^{2} dha —	dhasa^{2}ri-^{2}ga^{2}	ri-^{2} — sa^{2} —
न् क ळे तो	दे ऽ व ऽ	सं त सं ग	वी ऽ ण ऽ
dha-ni sa^{2}ga^{2}	dha ni dh-—	sa^{2}ni dhadh-	ga ri ri- sa
चा स ना जा	ळो ऽ नि ऽ	शु ऽ द्ध ऽ	क ऽ रा ऽ

Raga No. 39.

Sa	Ri-	Ri	Ga	Pa	Dha-	Dha	Ni
240	250	270	300	360	375	400	450
			4		5		6
	5		6			4	
		6		4			5

×	÷	×	=
sa² sa² ni dha	pa dha-ga—	ri sa ri- sa	ga — ga —
स गु ण हैं	ब्र ऽ ह्म ऽ	वि ट्ठ ल चि	बो ऽ ले ऽ
ni dh- ga pa	ni ri² sa² —	dha — ga—	ri- — sa —
ए क पां व	हि ऽ ले ऽ	तु ऽ का ऽ	रा ऽ मा ऽ
ga dh- ni pa	ni ri² sa² —	dh sa² ri-²ga²	ri-² — sa² —
तु का रा मा	तु ऽ वां ऽ	के ले जे अ	भं ऽ ग ऽ
ga² ri² ri-² sa²	dha- —pa—	ni dh dh- pa	ga ri ri- sa
क रि ती जे	ज ऽ गीं ऽ	नि ऽ त्य ऽ	पा ऽ ठ ऽ

Raga No. 40.

Sa	Ri-	Ri	Ga	Pa	Dha	Ni
240	250	270	300	360	400	450
4			5	6		
	5		6		4	
		6		4		5

÷	×	=	×
dha$_2$ — sa —	ri- — ga —	pa — ni ri^2	sa^2 — — —
दे ऽ ह ऽ	त्या ऽ गा ऽ	अं ऽ ऽ ऽ	तीं ऽ ऽ ऽ
ri^2 sa^2 ni pa	dha — ga —	ri- — sa —	ga ri ri- sa
ह रि बो ला	स ऽ र्व ऽ	का ऽ ळीं ऽ	बो ऽ ला ऽ

---

ga pa sa^2 sa^2	pa ni ri^2 sa^2	dha sa^2 ri-^{2} ga^2	ri^2 ri-^{2} sa^2 —
ह रि बो ला	भां ड तां ऽ	ह रि बो ला	कां ड तां ऽ
ga^2 ri^2 ri-^{2} sa^2	ni ni pa —	sa^2 ni dha pa	ga ri ri- sa
ड ठ तां ऽ	ब स तां ऽ	ह ऽ रि ऽ	बो ऽ ला ऽ

Raga No. 41.

Sa	Ri	Ga-	Ga	Pa	Dha	Ni
240	250	288	300	360	400	432
4			5	6		
	5		6		4	
		4		5		6

×	÷	×	=
dha, sa ri ga	pa — ni pa	ga- ga-sa sa	pa — ga —
क रा रे बा	पां ऽ. नों s	सा ध न ह	री s चें s
ni pa — ga-	sa sa ga pa	dha ga — ri	ga — — —
झ णीं s क	र णी चें s	क रूं ऽ न	का s s· s

ga pa sa^{2} dha	ri^{2} — ga^{2} —	ni sa^{2} ga-^{2}sa^{2}	ga^{2} — sa^{2} —
जे णें न ये	ज ऽ न्म ऽ	य मा ची या	त s ना s
ga^{2} ga-^{2} ri^{2} sa^{2}	dha — pa—	sa^{2} ni dha pa	ga ga- ri sa
ऐ शि या सा	ध s ना s	क ऽ रा s	कां s हीं s

Raga No. 42.

Sa	Ri-	Ri	Ga	Pa	Dha
240	250	266⅔	300	360	400
4			5	6	
	5		6		4
		4			6

×	÷	×	=
dha$_2$ sa ri —	dha$_2$— ri- ga	pa — ga sa	ga — — —
प्र भु ता ऽ	को ऽ स ब	को ऽ •उ भ	जे ऽ ऽ ऽ
ga pa sa^2 —	dha sa^{2}ri-^{2} —	dha pa ga ri	ga ri ri- sa
प्र भु को ऽ	भ ऽ जे ऽ	न ऽ ऽ ऽ	को ऽ ऽ य

dha ga — ri	ga pa sa^2 —	dhasa^{2}ri-^{2}ga^2	ri^2 ri-^{2} sa^2 —
क ह ऽ क	वी ऽ र ऽ	प्र भु को ऽ	भ ऽ जो ऽ
ga^2 ri^2 ga^2 ri-^{2}	sa^2 — dhapa	sa^2 — dhapa	ga ri ri- sa
प्र भु ता ऽ	चे ऽ री ऽ	हो ऽ ऽ य	हो ऽ ऽ य

Raga No. 43.*

Sa	Ri-	Ri	Ga	Ma	Dha-	Dha
240	250	256	300	320	384	400
6				4		5
		4		5	6	
	5		6			4

×	÷	×	=
ma$_2$dha$_2$sa sa	dha$_2$ ri- ga—	rima dha-ma	dha— — —
श्री गो विं द	गो पा ळ ऽ	वा चा नि ख	ळ ऽ ऽ ऽ
sa^{2}dham adh-	ma ri sa —	dha ga ri- sa	ga ri- sa —
तो उ द्ध रे	ता त्का ळ ऽ	क ऽ ली ऽ	मा ऽ जीं ऽ

madhasa^{2}dha	ri-^{2} — ga^2—	dha-sa^{2}ri^{2}ma^2	ga^2 ri-^{2}sa^2 —
ना रा य ण	ना ऽ म ऽ	हें चि पा रा	य ऽ ण ऽ
ma^2 ga^2 ri^{2}sa^2	dha- —sa^2—	ga^{2}ri^2 sa^2 dha	ma ga ri- sa
उ द्ध र ल	ज ऽ न ऽ	इ ऽ ह ऽ	लो ऽ कीं ऽ

*Note the apparent resemblance of this Raga with No. 17 of three groups.

Ri (250) may be omitted in Tans.

Raga No. 44.

Sa	Ri-	Ri	Ma	Dha-	Dha
240	256	$266\frac{2}{3}$	320	384	400
6			4		5
	4		5	6	
		4			6

×	÷	×	=
dha$_2$ sa ri ma	ri-ma dha---	sa^{2}dhamamama	dha —ma—
ज न्मा चें का	र ऽ ण ऽ	रा म ना म	पा ऽ ठीं ऽ
sa^{2}dhama ma	dha-—ma—	ri- — sa —	ma ri ri- sa
जा ई जे वै	कुं ऽ ठीं ऽ	ए ऽ की ऽ	हे ऽ ळा ऽ
ma dha sa^{2}ri^2	ma^2 — ri^2 —	dh-sa^{2}ri-^{2}ma^2	ri-^{2} — sa^2 —
रा म रा म	ऐ ऽ सा ऽ	जि ऽ व्हे ऽ	ठ ऽ सा ऽ
.ma^2 ri^2 ri-^{2}sa^2	dha dhma—	sa^{2}dh dh-ma	ri ri- sa —
उ द्ध रे ल	आ पै सा ऽ	इ ऽ ह ऽ	लो ऽ कीं ऽ

Raga No. 45.

Sa	Ri-	Ri	Ga	Ma	Dha	Ni
240	256	$266\frac{2}{3}$	288	320	384	$426\frac{2}{3}$
	4			5	6	
		5		6		4
5			6		4	

×	÷	×	=
ni ma ri sa	dha$_2$sa ga sa	ri-madha ma	dha— — —
दों अ क्ष रीं	रा म हा ऽ	ज प प र	म ऽ ऽ ऽ
ri ma ri- ma	dha ma nidh	ma — ri —	ga ri ri- sa
न ल गे ऽ	तु ज ने म	ना ऽ ना ऽ	पं ऽ थ ऽ
dha sa^{2}ga^{2}sa^2	ma^{2}ma^{2}ri-^{2}sa^2	ni ri^2 ma^{2}ma^2	ga^2 ri^2 sa^2 —
ना मा ह्म णे	प वि त्र ऽ	श्री रा म च	रि ऽ त्र ऽ
ma^2 ga^{2}ri^{2}ri-^{2}	ga^2 — sa^2 —	sa^2 nidha ma	ga ri ri- sa
उ द्ध री तें	गो ऽ त्र ऽ	पू ऽ र्वं ऽ	जैं ऽ सी ऽ

Raga No. 46.*

Sa	Ri-	Ri	Ga	Ma	Dha	Ni
240	256	$266\frac{2}{3}$	$284\frac{4}{9}$	320	384	$426\frac{2}{3}$
	4			5	6	
		5		6		4
			4			6

×	÷	×	=
ga ga ri sa	ri- — sa —	ga —madha	ni — ma —
वि ष यां चे	गो ऽ ड ऽ	कां ऽ. क रि	शी ऽ ल ऽ
ri· — ma —	dha —ni —	ma ga ri sa	ri·— sa —
हो ·ऽ ई ऽ	जो ऽ ड ऽ	इं ऽ द्रि य	बा ऽ धा ऽ
ga. — ma dh	sa^{2} — ri-^{2} sa^{2}	ga^{2} ri^{2} sa^{2} ri^{2}	ma^{2}— ga^{2}—
स ऽ वे हा	ल टि कें ऽ	जा ण तूं हें	नि ऽ कें ऽ
ma^{2} ga^{2} ri^{2}sa^{2}	ri-^{2} — sa^{2} —	sa^{2} ni dhama	ga ri ri- sa
रा में वी ण	ए ऽ कें ऽ	न ऽ सु ऽ	टि ऽ जे ऽ

*Note that the slight difference of one note (Ga), is giving a Raga, separate from the preceding one. This Raga closely resembles Malcoms.

Raga No. 47

Sa	Ri	Ga	Ma	Dha-	Dha	Ni
240	270	300	337½	375	405	450
	4		5		6	
			6			4
		4		5		6

×	–	×	÷
ri ma dhama	ni ri^2 sa^2 —	ni dha- ga ri	ma ga ri sa
मा या जा ळ	मो ऽ हो ऽ	इं द्रि यां चा	रो ऽ हो ऽ
ni$_2$ sa ri ma	ni — dha-—	ga ma nidha	ga ri sa —
प री न ध	र ऽ वे ऽ	भा ऽ वो ऽ	पं ऽ थें ऽ
ma ni ma dh	ri^2 — sa^2 --	ni dha-ga^2—	ma^2 ga^{2}ri^{2}sa^2
ना मा ह्म णे	दे ऽ घा ऽ	क रीं तूं ऽ	ल व ला हो.
ma^{2}ga^2 ri^2 sa^2	ni — dha-—	sa^2 nidhdha-	ma ga ri sa
म यू रा चा	टा ऽ हो ऽ	घ न ग ऽ	जें ऽ ना ऽ

Raga No. 48.

Sa	Ri	Ga-	Ga	Pa	Ni-	Ni
240	270	288	300	360	432	450
	6			4		5
		4		5	6	
4			5	6		

×	÷	×	=
ni pa ni- pa	ga ri ga- ri	sa — ri ga	pa — — —
ಕ್ಷ ಣ ಭಂ ಽ	ಗು ರ ವೀ ಽ	ಸಂ ಽ ಸಾ ಽ	ರಾ ಽ ಽ ಽ
ga ri ga- ri	sa — ni_2 sa	ni-$_2$ pa_2 ni_3 sa	ga pa ga- ri
ಎ ನು ತ ಲಿ	ಪೋ ಽ ದ ವು	ಯು ಗ ಗ ಳು	ಎ ನಿ ತೋ ಽ
sa ri ga pa	ga- ri ga pa	sa^2 — ni ri^2	sa^2 — — —
ಯು ಗ ಭಂ ಽ	ಗು ರ ವೇ ಽ	ನಾ ಽ ಗಿ ಽ	ಲ್ಲಾ ಽ ಽ ಽ
ga pa sa^2 ni	pa ni ri^2 sa^2	ni-sa^2ga-^{2}ga^2	ri^2 — sa^2 sa^2
ಮ ನು ಜ ನು	ಜ ನಿ ಸು ವ	ಮ ನು ಜ ನು	ಸಾ ಽ ಯು ವ
ga^2 ga-^{2} $ri^2$$sa^2$	ni pa ni- pa	sa^2 ni ni- pa	ga ga- ri sa
ಜ ನ ತೆ ಯ	ಜೀ ಽ ವ ನ	ಝು ರಿ ಯ ದು	ಬ ಽ ತ್ತು ದು

Raga No. 49.

Sa	Ri	Ga	Ma	Pa	Ni-	Ni
240	270	288	337½	360	432	450
	6			4		5
		4		5	6	
			6			4

×	÷	×	=
ma pa ni sa'	ri' — sa' —	ni- pa ga ri	pa — — —
दा ऽ स क	बी ऽ रा ऽ	क्यों ऽ बँ ऽ	धे ऽ ऽ ऽ
ri' — sa' —	ni- — — pa	ga — ri sa	ni_2 ri — sa
जा ऽ के ऽ	ना ऽ ऽ म	आ ऽ ऽ ऽ	धा ऽ ऽ .र
ma — ni ri'	— ri' sa —	ni- sa' ga' —	ga' — sa' —
मो ऽ र तो	ऽ र की ऽ	जें ऽ ऽ व	री ऽ ऽ ऽ
ma' ga' ri' sa'	ni- — pa —	sa' ni ni- pa	ma ga ri sa
ब टि बाँ ऽ	धा ऽ सं ऽ	सा ऽ ऽ ऽ	ऽ ऽ ऽ र

Raga No. 50.

Sa	Ri	Ga-	Ga	Pa	Dha	Ni-	Ni
240	270	288	300	360	375	432	450
	6			4			5
		4		5		6	
			4		5		6

×	÷	×	=
ga- pa ni- pa	ni ri^2 sa^2 —	ni dha ga ga	pa — — —
का स वी चे	ह ऽ ष्टी ऽ	जैं ये • ई जे	भे ऽ टी ऽ
ni$_2$ sa ri ga	pa — ga- —	ni- pa ni dh	ga — sa —
अ मृ ता ची	वृ ऽ ष्टी ऽ	घ ऽ डे ऽ	त्या ऽ सी ऽ
ga ḍha ni sa^2	pa ni ri^2 sa^2	ni- sa^{2}ga-^{2}sa^2	ga^2 — sa^2—
तै सैं हैं भ	ज ऽ न ऽ	श्री रा मा चें	ध्या ऽ न ऽ
pa^2 ga^{2}ga-^{2}ri^2	sa^2 — ni pa	ni ni- dhapa	ga ga- ri sa
वा चे ना रा	य ऽ ण ऽ	अ मृ त ऽ	म ऽ य ऽ

———

Raga No. 51.

Sa	Ri	Ga	Ma	Pa	Ni
240	270	300	337½	360	450
	6			4	5
4		5		6	
			6		4

×	÷	×	=
pa ni ri² sa²	ga — pa —	ni pa ma pa	ni ri² sa² —
ध न्य त्या चें	कु ऽ ळ ऽ	स दा पैं सु	फ ऽ ळ ऽ
ri² sa² ni pa	ma pa ni —	pa — ri ga	sa ri sa —
दि न नि शीं	प ऽ ळ ऽ	रा ऽ म ऽ	ना ऽ म ऽ

ma pa ni sa²	ni ri² sa² —	ga pa sa² ri²	ga² ri² sa² —
ना मा ह्म णे	चो ख टा ऽ	भ क्त तो उ	त्त ऽ म ऽ
ma²ga² ri² sa²	ni — pa —	sa² ni pa ma	ga ri sa —
वा चे सी सु	ग ऽ म ऽ	रा ऽ म ऽ	ना ऽ म ऽ

Raga No. 52.

Sa	Ri	Ga-	Ga	Ma	Pa	Ni
240	270	288	300	324	360	432
		4			5	6
4			5		6	
	5			6		4

×	÷	×	=
pa ga sa ga-	ni pa ga- —	ni pa ma ri	pa — — —
स दा फ ळ	सु फ ळ ऽ	वा चे सी गो	षा ऽ ळ ऽ
sa ga pa ga-	pa — ni —	ma — ri —	ga ga- ri sa
वं दी क ळी	का ऽ ळ ऽ	शा ऽ स्त्र ऽ	सां ऽ गे ऽ

———

ga pa sa^{2} sa^{2}	ga^{2} — sa^{2} —	ni ri^{2} ma^{2} ri^{2}	ni sa^{2} ga-^{2} —
ब्र ह्मां ड ना	य ऽ क ऽ	ऐ सें जें कौ	तु ऽ क ऽ
ma^{2} ga^{2} ga^{2} ri^{2}	sa^{2} — ni pa	sa^{2} ni pa ma	ga ga- ri sa
तें चि ना म	ए ऽ क ऽ	श्री ऽ कृ ष्ण	ऐ ऽ सें ऽ

———

Raga No. 53.

Sa	Ri	Ga	Pa	Dha	Ni
240	250	300	360	375	450
		4		5	6
	4			6	
4		5	6		

×	÷	×	=
ni dha ga —	pa ga sa —	dha₂ sa ri —	ga ri sa —
म न हा ऽ	मो ग रा ऽ	अ पु नी ऽ	ई श्व रा ऽ
dha pa nidha	sa² ri² sa² —	dha — ga —	ri — sa —
पु न र रि	सं सा रा ऽ	ये ऽ णें ऽ	ना ऽ हीं ऽ
pa dha ni sa²	ri² — sa² —	ni dha ga²ri²	ga² ri² sa² —
तु का ह्म णे	ऐ ऽ सा ऽ	ज न्म दि ला	दे ऽ वा ऽ
ga² ri² sa² ni	dha — pa —	sa² ni dha pa	ga ri sa —
स या वा स	व्हा ऽ वा ऽ	वै ऽ कुं ऽ	ठा ऽ सी ऽ

Raga No. 54.

Sa	Ri-	Ri	Ga	Pa	Dha	Ni
240	250	270	300	360	375	450
			4		5	6
	4				6	
		6		4		5

×	=	×	÷
ga pa dha ni	dha — pa —	ga ri ga ri	ri- — sa —
गा ई लि या	गु s ण s	सं तो [illegible] त	या s नें s
ri ga pa —	ga pa dha —	ni dha ga —	ri- — sa —
क रि· तां s	की र्ते नें s	आ ऽ ल्हा ऽ	द s तो s

——

pa ni ri sa^2	ri-^{2} — sa^2 —	ga^2 pa^2 ga^2 ri-^{2}	dha — sa^2 —
आ ल्हा दे हा	दे ऽ व ऽ	की र्ति वा खा	णि s तां s
ga^2 ri^2 ri-^{2} sa^2	ni — dha —	pa — ga —	ri ri- sa —
प वा डे सां	ग ऽ तां s	या s चे s	या s स s

———

Raga No. 55.

Sa	Ri-	Ri	Ga	Ma	Dha
240	250	$266\frac{2}{3}$	300	320	400
	5		6		4
6				4	5
		4			6

×	÷	×	=
dha$_2$ sa ri sa	ga ga ri- sa	dh ma gama	dha — — —
ना दिर दा नि	दा दिर दा नि	दा नि दा नि	तों ऽ ऽ ऽ
ma dha sa^2—	dha —ma—	dh dh mama	ri ri- sa —
दिर दिर तों ऽ	तों ऽ तों ऽ	त न न न	दे रे ना ऽ
ma dha sa^2—	dha sa^{2}ri-^{2}—	sa^2— dha —	ma ma dh —
दिर दिर तों ऽ	त न तों ऽ	तों ऽ तों ऽ	दे रे तों ऽ
ga madhasa^2	ri^2 sa^{2}dhama	ri-^{2} ri-^{2}dh ma	ma ga ri- sa
नादिर दिरादिर	दा दिर दा नि	दादिर दिरादिर	दा दिर दा नि
dha sa^2 ri^{2}sa^2	dhasa^{2}ri-^{2}ga^2	dhsa^{2}ma^{2}ga^2	ri^2 ri-^{2} sa^2 sa^2
दिर दिर तों ऽ	त न तों ऽ	त न न न	त द्रे दा नि
ma^2 ga^2 ri^{2}ri-^{2}	dha —sa^2 —	sa^2 dha maga	ri ri- sa sa
दिर दिर दा नि	तों ऽ सों ऽ	ना दिर दा नि	दा दिर दा नि

Raga No. 56.

Sa	Ri-	Ri	Ga	Ma-	Ma	Ni-	Ni
240	256	$266\frac{2}{3}$	$284\frac{4}{9}$	320	$341\frac{1}{3}$	$426\frac{2}{3}$	$455\frac{1}{9}$
		5		6		4	
	6				4	5	
			5		6		4

×	=	×	÷
ni$_{2}$ sa ga —	ma ga — —	ma ni- ri-^{2}sa^{2}	ni- ma- ri —
त पा चैं ऽ	त प ऽ ऽ	रा म॰ हें अ	मू ऽ प ऽ
ri ma- ni- ma	ni — sa^{2} —	ni — ma —	ga ri ri- sa
क ·रीं कां रे	ज ऽ प ऽ	रा ऽ म ऽ	ना ऽ मीं ऽ
ni- ma ni sa^{2}	ma-^{2}— ri^{2} —	sa^{2} ri-^{2} ma-^{2}ma^{2}	ga^{2} ri^{2} ri-^{2}sa^{2}
रा म कृ ष्ण	ह्म ऽ णे ऽ	वा चे ना रा	य ऽ ण ऽ
ma^{2} ma-^{2}ri-^{2} sa^{2}	ga^{2} — ri^{2} —	ni ni-mama-	ga ri ri- sa
तु टे ल बं	ध ऽ न ऽ	य ऽ म ऽ	पा ऽ श ऽ

Raga No. 57.

Sa	Ri-	Ri	Ga	Ma-	Ma	Ni
240	256	$266\frac{2}{3}$	$284\frac{4}{9}$	320	$341\frac{1}{3}$	$426\frac{2}{3}$
		5		6		4
	6				4	5
			4			6

÷	×	=	×
ri ma- ni ma	ga — ri sa	ni$_2$ ri- ma ri-	sa — — —
ನಿ ಯ ಮ ವ	ಪಾ ಽ ಲಿ ಪ	ಜ ನ ರಿ ವ	ರು ಽ ಽ ಽ
ni — ma ga	ma ni ri-^{2} —	ni ni ma-—	ga ri ri- sa
ಅ ಽ ನ್ಯ ರ	ತ ಲೆ ಗೂ ಽ	ದ ಲು ನೋ ಽ	ಡು ವ ರು ಽ
ma ni ri-^{2}sa^2	— ri^2 — sa^2	ni ri^{2}ma^{2}ma^2	ga^2 — ri^2·sa^2
ಪ ರ ರ ಕೂ ಽ	ಽ ಳು ನೀ ಽ	ರು ತ ಮ ಗೆ	ಬಾ ಽ ರ ದು
ma-^{2}ga^{2}ri^{2}sa^2	— ri-^{2} — sa^2	ma^{2}ma-^{2}ri-sa^2	ni ri^2 sa^2 sa^2
ಪ ರ ರ ದೇ ಽ	ಽ ವ ದೆ ಽ	ವ್ಯ ತ ಮ ಗೆ	ಬ ಡಿ ವು ದು
ni ri-^{2}ma^{2}ga^2	ri^2 —ma-^{2}ga^2	ri^2 ga^2 ri^2 sa^2	ni — sa^2 sa^2
ಪ ರ ನ ನು	ಕಾ ಽ ಣು ವ	ನೆಂ ಽ ತ ದು	ಇಂ ಽ ತ ಹ
ga^2 ri^2 ri-^{2} sa^2	ni —ma ma-	ga — ri —	ri- — sa —
ಮ ರು ಳ ನ	ಸಂ ಽ ಗ ತಿ	ಬೇ ಽ ಡಾ ಽ	ಬೇ ಽ ಡಾ ಽ

Raga No. 58.

Sa	Ri	Ga	Ma-	Ma	Ni-	Ni
240	$266\frac{2}{3}$	$284\frac{4}{9}$	320	$341\frac{1}{3}$	$426\frac{2}{3}$	$455\frac{1}{9}$
	5		6		4	
		4			6	
		5		6		4

×	=	×	÷
ri ma- ni-ma-	ga — ri sa	ga ma ni sa^2	ni- — sa^2—
सा धे ल सा	ध ऽ न ऽ	हो ती. को टी	य ऽ ह्न ऽ
ni$_2$ sa ga ma	ni-— ma- —	ga — ri—	ni-$_2$ —sa —
ना म ज ना	दं ऽ न ऽ	ज ऽ प ऽ	क ऽ रीं ऽ

ma- ni-ri^2 sa^2	ni sa^2 ga^2 —	ni- ni sa^2 sa^2	ga^2 ma^2 ga^2—
ना मा ह्म णे	ाजि व्हा री ऽ	ना म स्स र	ण क री ऽ
ma-^{2} ga^{2}ri^{2}sa^2	ni-— ni sa^2	ni ni-ma ma-	ga — ri sa
ह्य णे न र	ह ऽ री ऽ	ए ऽ क्या ऽ	भा ऽ वें ऽ

Raga No. 59.*

Sa	Ri	Ga	Ma	Pa	Dha	Ni
240	270	300	$337\frac{1}{2}$	360	375	450
			6			4
	6			4		5
		4			5	6

×	÷	×	=
$\overset{2}{\text{ri}}$ $\overset{2}{\text{sa}}$ ni pa	ni pa ma pa	ga dha ni $\overset{2}{\text{sa}}$	ni — — —
हा चि ने म	सा ऽ री ऽ	सा धे ल ह	री ऽ ऽ ऽ
ni dha ga pa	ni $\overset{2}{\text{ri}}$ $\overset{2}{\text{sa}}$ —	ni pa ma pa	ri — sa —
ना म हैं मु	रा ऽ री ऽ	अ ऽ च्यु ऽ	ता ऽ चें ऽ
	——	——	
ma pa ni $\overset{2}{\text{ri}}$	ni $\overset{2}{\text{sa}}$ $\overset{2}{\text{ri}}$ $\overset{2}{\text{ga}}$	ni dha $\overset{2}{\text{ga}}$ $\overset{2}{\text{ri}}$	ni — $\overset{2}{\text{sa}}$ —
ना मा ह्म णे	रा ऽ म ऽ	आ ह्मां हा चि	ने ऽ म ऽ
$\overset{2}{\text{ma}}$ $\overset{2}{\text{ga}}$ $\overset{2}{\text{ri}}$ $\overset{2}{\text{sa}}$	ni — pa —	$\overset{2}{\text{sa}}$ ni dha pa	ma ga ri sa
नि त्य तो स	प्रे ऽ म ऽ	ज ऽ प ऽ	आ ऽ ह्मां ऽ

*This is Latangi; but therein Dha is not 375.

CHAPTER VIII.

NEW RAGAS OF FOUR GROUPS.

A note on symmetry.

Although we have often heard Tans and Alaps in symmetrical order of four by four, or eight by eight notes, during the singing of the Ragas of couples. which are invariably symmetrical, and during the singing of Vasant, Bilawal, Zinzoti and others, we have not, as yet, come across a complete Chisa, composed symmetrically. We are attempting to undertake the same in composing the Chisas for some of the following Ragas. It is not that, in a symme-trical Raga, every thing must be symmetrical. The sensa-tion of the Raga is not spoiled in the least, if the symmetry is overlooked in such Ragas. However, symmetry, if regularly followed, affords a peculiar harmonic sensation of its own, which we are unable to hear in the irregular arrangement of the notes of a symmetrical Raga. In the body of the Chisas of such symmetrical Ragas, the first eight syllables of each line consist of the mother notes of the Raga, and the next eight syllables will be their corresponding sixth relatives each in its proper place, or vice versa. A double line in the centre will separate the two symmetrical parts of the Chisa. In some of such Ragas we will find a complete Raga of two groups on one side, and its corresponding "sixth relative" Raga on the other. Amongst the existing Ragas Bilawal, Zinzoti and others can be arranged in this way for

composing new Chisas· For instance, Bilawal can be analysed as consisting of Nagaswarawali and its sixth relative Raga, Hansadhwani· Taking the notes of Nagaswarawali on the left hand side, and the corresponding sixth relatives, which all comprise Hansadhwani, on the right hand side, or vice versa, fine Chisas can be built up in Bilawal. Of all our new Ragas those of four harmonic tripples will be quite convenient for providing notes to compose Chisas symmetrically, the Ragas of two or three groups being too small to be divided symmetrically

We should note here that mere symmetry of notes incapable of being arranged into harmonic groups, that can't be linked together by common notes, will not carry the Ragaic harmony.

Raga No· 1.*

Sa	Ri	Ga-	Ga	Pa	Dha	Ni-	Ni
240	270	288	300	360	384	432	450
4			5	6			
	6			4			5
		4		5		6	
5		6			4		

=	×	÷	×
pa ga sa ga-	sa dha₂ sa —	ri² ni pa ni-	pa ga- pa —
का य तु ज	कै ऽ सैं ऽ	जा णा वें गा	दे ऽ वा ऽ

*Symmetry:—

Sa Ga- Ga Pa Dha | Pa Ni- Ni Ri Ga-

(Raga No, 1 of two groups) | (Raga No, 15 of two groups)

dha$_2$ sa ga-sa	ga ga sa —	ga- pa ni- pa	ni ni pa —
आ णा वें अ	नु भ वा ऽ	कै ऽ से ऽ	प ऽ रि ऽ
ga sa ga- sa	dha — pa—	ni pa ni- pa	ga- — ri —
स गु ण नि	गु ऽ ण ऽ	स्थू ळ कीं ल	हा ऽ न ऽ
sa^{2}dha pa ga	ga- ga- sa—	pa ga- ri ni$_2$	ni-$_2$ ni-$_2$pa$_2$—
न क ळे अ	नु मा न ऽ	म ऽ ज ऽ	तु ऽ झें ऽ

---

ga- pa ni- pa	ni — pa —	dhasa^{2}ga-^{2}sa^2	ga^2 — sa^2 —
को ण ता नि	र्धा ऽ र ऽ	क रूं हा वि	चा ऽ र ऽ
pa ni ri^2 ni	ni- pa ga—	sa^2 ga^{2}pa^{2}ga^2	ga-^{2}sa^{2}dha—
भ व सिं धु	पा ऽ र ऽ	त ऽ रा ऽ	व ऽ या ऽ
ga-^{2} ri^2 ni pa	ni- — pa —	dha pa ga sa	ga- — sa —
तु का ह्म णे	कै ऽ से ऽ	पा य आ तु	ड ऽ ती ऽ
pa^{2}ga^{2}ga-^{2}sa^2	dha — pa—	ri^2 ni ni - pa	ga- — sa —
न क ळे श्री	प ऽ ती ऽ	व ऽ मैं ऽ	म ऽ ज ऽ

Raga No. 2.*

Sa	Ga-	Ga	Ma	Pa	Dha-	Dha	Ni
240	288	300	320	360	384	400	432
4		5		6			
5	6				4		
6			4			5	
	4			5			6

=	×	÷	×
sa^{2}dha dh-ma	ga- — sa —	pa ga ga- sa	ni$_2$ — pa —
क्ष मा द या	दो ऽ न्ही ऽ	रु क्मि णी ते	रा ऽ ई ऽ
dha-$_2$sa ga-sa	ma dhasa^2—	ga- pa ni pa	sa ga pa —
दो हीं क डे	बा ऽ ही ऽ	उ ऽ भी ऽ	अ ऽ से ऽ
sa ga pa pa	ga- pa ni pa	ma dhasa^{2}sa^2	dh-sa^{2}ga-^{2}sa^2
बु द्धि व वै	रा ऽ ग्य ऽ	ग रु ड ह	नु मं त ऽ
ma^{2}ga-^{2}sa^{2}dh	dha-—ma—	sa^2 ni pa ga	ga- — sa —
क र जो ऽ	डो ऽ नि ऽ	ते थें पु ढें	उ ऽ भा ऽ

*Symmetry:—

Ma Dha- Dha Sa Ga- | Sa Ga- Ga Pa Ni
(Raga No. 2 of two groups) | (Raga No. 16 of two groups)

Raga No. 3.*

Sa	Ri	Ga-	Ga	Ma	Pa	Dha-	Dha
240	256	288	300	320	360	384	400
4			5		6		
5		6				4	
6				4			5
	4			5		6	

×	=	×	=
dh-$_2$sa ga- sa	pa ga pa —	ri madha-ma	sa^2 dha sa^2—
दे ह तो पं	ढ ऽ री ऽ	प्रे म पुं ड	ली ऽ क ऽ
ri^2 sa dha ma	dha-—ma—	dha-pa ga sa	ga- — sa —
स्व भा व स	न्मु ऽ ख ऽ	चं ऽ द्र ऽ	भा ऽ गा ऽ
ga·pa dh-sa^2	ga-^{2} — sa^2—	dha sa^{2}ri^{2}ma^2	dha-—ma—
वि वे का ची	वी ऽ ट ऽ	आ त्मा पं ऽ	ढ ऽ री ऽ
pa^2 ga^{2}ga-^{2}sa^2	dha- —pa—	sa^{2}dhadh-ma	ri — sa —
जे थें ते थें	दे ऽ व ऽ	ठ ऽ सा ऽ	वे ऽ ला ऽ

*Symmetry:—

Ma Dha- Dha Sa Ri | Sa Ga- Ga Pa Dha-
(Raga No. 12 of two groups) | (Raga No. 1 of two groups)

Raga No. 4.*

Sa	Ri-	Ri	Ga	Ma	Dha-	Dha	Ni
240	256	$266\frac{2}{3}$	288	320	384	400	$426\frac{2}{3}$
5			6		4		
6				4		5	
	4			5	6		
		5		6			4

×	=	×	÷
dh-$_2$ sa ga sa	ma dhasa^2—	ri- ma dh-ma	ni$_2$ ri ma --
क रूं हें की	र्त ऽ न ऽ	रा म ना रा	य ऽ ण ऽ
dh$_2$ sa dh-$_2$sa	ga ma ga —	ri ma ri- ma	dha-ni dh·—
ज नीं ज ना	र्द ऽ न ऽ	हें ऽ चि ऽ	ख ऽ रें ऽ
dh- ni dh- ni	ri-^{3} ma^2 ri^2—	ga^2 ma^2 ga^2 ma^2	dha- sa^{2}dh·—
ज गा चा ज	न ऽ क ऽ	रा म कृ ष्ण	ए ऽ क ऽ
ma^2 ri^2 ni dh-	ri-^{2} — ma^2—	sa^{2}dhama ga	dha·$_2$— sa—
न क रि तां	वि वे क ऽ	स्म ऽ र ऽ	रा ऽ म ऽ

*Symmetry:—

Ma Dha- Ni Ri- Ri	Sa Ga Ma Dha- Dha
(Raga No, 13 of two groups)	(Raga No. 2 of two groups)

Raga No. 5.*

Sa	Ri	Ga·	Ga	Ma	Pa	Dha·	Dha	Ni
240	270	288	300	337½	360	384	405	450
4			5·		6			
5		6				4		
	4			5			6	
	6				4			5

=	×	÷	×
pa$_2$dha-$_2$ni$_2$sa$_2$	ri ga sa —	ri ga-ma pa	dha ni pa —
स त्य स त्य	जा s णा s	त्रि वा चा ने	म s हा s
ni dha- pa ga	ri — sa —	ma ga- ri ni$_2$	dha$_2$ — pa$_2$ —
अ नु भ व	प s हा s	प s दो s	प s दीं s
sa^2 ni dha-pa	ga ri sa —	pa ma ga- ri	ni$_2$ dha$_2$pa$_2$ —
प दो प दीं	प s हा s	श्री मु ख चां	ग s लें s
dha-$_2$ni$_2$ sa$_2$ ri	ga ri pa —	ga-ma pa dh	ni dha sa^2 —
प्र त्य क्ष पा	ऊ s लें s	वि s ठो s	बा s चीं s
ri ga- ma pa	dha ni dhapa	pa dha-ni sa^2	ri^2 ga^2 ri^2 sa^2
वि ठो बा च	भे s टीं s	ह रे ल बा	चिं s ता s
pa ma ga- ri	ni dha pa —	sa^2 ni dha-pa	ga^2 ri^2 sa^2 —
तु ह्मा ला गीं	आ s तां s	सां s गि s	त s लें s

*Symmetry:-Pa Dha- Ni Sa Ri Ga | Ri Ga- Ma Pa Dha Ni

pa dha ni dh	ri ga- ma pa	sa³ ri³ ga³ ri³	pa dha-ni sa³
सां गि त लें	ख ऽ रें ऽ	वि श्वा चि या	हि ऽ ता ऽ
ma³ ga-³ri³—	ni dha pa —	ni dha- pa—	ga ri sa —
अ भं ग ऽ	वा चि ती ऽ	जे ऽ कां ऽ	न ऽ र ऽ

Raga No. 6.*

Sa	Ri-	Ri	Ga	Ma	Dha-	Dha	Ni
240	250	$266\frac{2}{3}$	300	$337\frac{1}{2}$	375	400	450
	5		6			4	
			4		5		6
				6			4
		4				6	

×	=	×	÷
dha₂ ni₂ ri-ni₂	ga — ri —	ga madh-ma	ni — dha —
ना मा चा म	हि ऽ मा ऽ	को ण क री	सी ऽ मा ऽ
ri-² ni dha dh	ri — ga —	dh-ma ga ga	dha — ni —
ज पा वें श्री	रा ऽ मा ऽ	ए ऽ का ऽ	भा ऽ वें ऽ
ga madh-ma	ni — dha —	dha ni ri-²ni	ga³ — ri³—
न ल ग ती	स्तो ऽ त्रें ऽ	ना ना मं त्र	यं ऽ त्रें ऽ
ga³ ma³ ga³ni	dha— dh—	dha ni dhaga	ri — ri- sa
व र्णी जे बा	व ऽ क त्रें ऽ	श्री ऽ रा म	ना ऽ म ऽ

*Symmetry:—Dha Ni Ri- Ri Ga | Ga Ma Dha- Dha Ni

Raga No. 7.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	256	266$\frac{2}{3}$	300	320	360	384	400	426$\frac{2}{3}$
4			5		6			
6				4			5	
	4			5		6		
		5		6				4

×	÷	×	=
dha$_2$sa gama	pa dha-pa—	ri ma dha ni	sa^2 ri-^{2} sa^2 —
अ हि ल्या द्रौ	प s दी s	सी ता ता रा	चा s री s
dha pamaga	sa dha-$_2$ sa—	ri^2 sa^2 ni dha	ma ri-ma —
मु ख्य मं दो	द s री s	प s ति s	व्र s ता s
sa^{2}dha mapa	ga sa dha-$_2$sa	ma ri ni$_2$ sa	dh ma ri-ma
ना म घे तां	त्या s ची s	वा णी हे प	वि s त्र s
dha pamaga	dha-$_2$— sa—	ri^2 sa^2 ni dha	ri- — ma —
हों य कु ळ	गो s त्र s	उ s द्ध s	र s ण s
sa ri- ri ma	dha ni dhma	pa dha-dhsa^2	ga^{2}ma^{2}ga^{2}sa^2
सं क ल्प वि	क s ल्प s	दं डो नि यां	दु s री s
ri^2 ma^2 ri-^{2}sa^2	ni dha ma—	dha sa^{2}dh-pa	ma^2 ga^{2}sa^2—
वा चे ह रि	ह s रि s	उ s च्चा s	रा s वें s

*symmetry:-Ma Dha Ni Sa Ri-Ri | Sa Ga Ma Pa Dha- Dha

ma^{2}ma^{2}ri^{2}sa^2	ri-^{2} sa^{2}ni dha	sa^2 sa^2 dh pa	dh-pa ma ga
ना हीं व द्ध	क ऽ ता ऽ	त या सं सा	रा ऽ ची ऽ
ma^2 ri^2 ri-^{2}sa^2	ni dha ma—	sa^2 dhdh- pa	ma ga sa —
जा च णी य	मा ऽ चीं ऽ	म ऽ ग ऽ	कँ ऽ ची ऽ

Raga No. 8*

Sa	Ri	Ga	Ma-	Ma	Pa	Dha	Ni-	Ni
240	270	300	324	337½	360	405	432	450
4		5			6			
	4			5		6		
	5		6				4	
	6				4			5

×	=	×	÷
ni- pa ni sa^2	ri ga ri sa	ma-ri ma pa	dha ni dh pa
ಬ ಡ ವ ನ	ಮ ಡ ದಿ ಗೆ	ಒ ಡ ವೆ ಯ	ಕೇ ಽ ಳ್ದೊ ಡೆ
ni$_2$ sa ri ga	pa ni- pa —	ma pa dhani	ri ma- ri —
ನು ಡಿ ವ ದು	ಏ ಽ ನ ದು	ಬ ಡ ಜ ನು	ನಾ ಽ ಽ ಽ
ri ma- pa pa	ma pa dhani	pa ni- sa^2 sa^2	ni sa^2 ri^2 ga^2
ಬಿ ಽ ಡ್ಯೆ ಯೊಂ	ಽ ಬು ವ ದೆ	ಬ ಡ ವ ನ	ಹೆಂ ಽ ಡ ತಿ
ma-^{2}ri^{2}ma^{2}ri^2	ni dha pa —	ni- pa ni pa	ga ri sa —
ಬಿ ಽ ಡ್ಯೆ ಯು	ದಾ ಽ ೦ ಽ	ದ್ರ್ಯ ದ ಬೇ ಽ	ಡು ಽ ಽ ಽ

*Symmetry:—Pa Ni- Ni Ṡa Ri Ga | Ri Ma- Ma Pa Dha Ni

Raga No. 9.*

Sa	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	250	300	320	360	375	400	450
•		4			5		6
4		5		6			
	5	6				4	
6			4			5	

×	÷	×	=
ma ga ri sa	dha$_2$ — sa —	sa^{2}ni dha- pa	ga — pa —
स म थे सो	ई s रा s	रा s म नि	धा s न s
dha$_2$ sa ri ga	ma — ga —	ga pa dh- ni	sa^2 — ni —
ज नीं ज ना	दे s न s	ए s क s	ध्या s ई s
ga dh- ni pa	ni — sa^2 —	dha ri^2 ga^{2}sa^2	ga^2 — ma^2 —
ना म हैं चि	सा s र s	ना म हैं चि	सा s र s
ma^2 ga^2 ri^{2}sa^2	dha — ma —	sa^2 ni dh- pa	ga — sa —
त रा ल नि	धीं s र s	श्रु s ति s	सां s गे s

*Symmetry:—

Dha Sa Ri Ga Ma | Ga Pa Dha- Ni Sa

(Raga No. 19 of two groups) | (Raga No. 9 of two groups)

Raga No. 10.*

Sa	Ri	Ga-	Ga	Ma	Pa	Dha	Ni-	Ni
240	270	288	300	320	360	400	432	450
4			5		6			
	6				4			5
		4			5		6	
6				4		5		

×	÷	×	=
$ma_2 pa_2 dh_2 sa_2$	sa ga· ga ma	sa ri ga pa	pa ni- ni sa^2
ज ळा चा ज	ळ बिं दु s	ज ळीं चि पैं	वि s रे s
pa ma ga sa	ga- sa dh_2 sa	ri^2 sa^2 ni pa	ni- pa ga pa
तै सें हें वि	घ s रे s	पां s चा s	ठा s यीं s
sa^2 dh pa ma	ga sa ga- sa	pa ga ri sa	ni_2 pa_2 $ni\text{-}_2$ pa_2
जी व शि व	वि चा र s	रा म हें म	धु s र s
ma ga sag a-	dha pama—	sa^2 ni pa ni-	ga ri sa —
जि व्हे सी उ	च्चा s र s	रा s म s	ना s म s
ga pa ni- pa	ni sa^2 ri^2 sa^2	dha sa^2 ga^2-sa^2	ga^2 ma^2 pa^2 ma^2
रा म ना म	ता र क s	शि व प ड	क्ष s री s
ri^2 sa^2 ni pa	ni- pa ga pa	pa^2 ma^2 ga^2 sa^2	ga^2- sa^2 dh sa^2
ऐ सी वा चा	क s रीं s	अ s रे s	मू s ढा s

*Symmetry:—Dha Sa Ga- Ga Ma Pa | Ga-Pa Ni- Ni Sa Ri

ga ri sa ni	pa ni- pa—	dha pamaga	sa ga- sa —
ना मा ह्म णे	ध्या ऽ न ऽ	शि वा चें ड	त्त ऽ म ऽ
ma ga ga-sa	dha pa ma—	sa² ni ni- pa	ga ri sa —
मं त्र हा प	र ऽ म ऽ	रा ऽ म ऽ	ना ऽ म ऽ

Raga No. 11.*

Sa	Ri	Ga-	Ga	Ma	Pa	Dha	Ni
240	266⅔	284⅘	300	320	360	400	426⅔
4			5		6		
6				4		5	
	5			6			4
		4					6

×	÷	×	=
ni_2 dha_2 sa ri	ga- — ri ma	ma gapadha	ni dha sa² —
भ वा ब्धी ता	र ऽ क ऽ	रा म कृ ष्ण	ना ऽ व ऽ
ma sa² ni ni	dha— pa —	ni ma ga- —	ri — sa —
रो हि णी चीं	मा ऽ व ऽ	स क ळ ऽ	दि ऽ से ऽ
ga mapadha	ni dha sa² —	dha ni sa² ri²	ga-² ri²ma² —
ना म हें चि	थो ऽ र ऽ	ना मं हें चि	थो ऽ र ऽ
ga²ma²ga²sa²	ni dha pa —	dha nidhama	ga- ri sa —
वै कुं ठीं बि	ढा ऽ र ऽ	रा ऽ म ऽ	ना ऽ में ऽ

*Symmetry:-Ma Dha Ni Sa Ri Ga- | Sa Ga Ma Pa Dha Ni

Raga No. 12.*

Sa	Ri-	Ri	Ga	Pa	Dha-	Dha	Ni
240	250	$266\frac{2}{3}$	300	360	375	400	450
4			5	6			
	5		6			4	
			4		5		6
		4				6	

×	÷	×	=
dha_2 sa ri-ga	ri — sa —	ga pa dh- ni	dha — pa —
क रि तां s	क s था s	ना म सु ख	रा s शी s
ga ri ri- sa	dha_2 — sa —	ni dh dh- pa	ga — pa —
उ द्धा र जी	वा s सी s	ए s का s	ना s मैं s
dha_2 sa ri sa	dh_2 ri- ga sa	ga pa dh pa	ga dh- ni pa
तैं हैं रा म	ना s म s	ज पैं तूं स	प्रे s म s
sa^2 dha ga ri	ri- — sa —	pa ga ni dha	dha- — pa —
न प हा सु	ग s म s	सु फ ळ s	स s दा s
ga dh- ni pa	ni dha pa —	dh ri-^{2} ga^2 sa^2	ga^2 ri^2 sa^3 —
ना मैं चि त-	र s ले s	ना मैं चि पा	व s ल s
ni dh pa dh-	ga — pa —	ga^2 ri^2 sa^2 ri-^{2}	dha — sa^2 —
ना मैं चि s	गे s ले s	वै कुं ठ भु	व s नीं s

*Symmetry:— Dha Sa Ri- Ri Ga | Ga Pa Dha- Dha Ni

ga pa dh -dh	ni — dha —	dh sa^2 ri-^{2} ri^2	ga^2 — ri^2 —
ना मा ह्म ण	ए s का s	रा में शीं वि	न s टे s
pa^2 ga^2 ni dh	dha- — pa —	sa^2 dha ga ri	ri- — sa —
चै कुं ठीं चे	पे s ठे s	पा व ले s	दे s खा s

Raga No. 13.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha	Ni
240	250	270	300	337½	360	375	450
			4			5	6
		6			4		5
				6			4
	4					6	

÷	×	=	×
ga pa ga ri-	ni$_2$ — sa —	ni ri^2 ni dha	ma — pa —
ना म वी ण	कां s हीं s	दु जें ये थें	ना s हीं s
ni$_2$ ri ma pa	dha— pa —	ga pa ni sa^2	ri-^{2} — sa^2 —
वे गीं ले व	ला s हीं s	रा s म s	ज s पा s
ri ma pa pa	dha— ni —	pa ni sa^2 sa^2	ri-^{2} — ga^2 —
गो विं द गो	पा s ळ s	वा चे सी र	सा s ळ s
ma^2 ma^2 ri^{2}ni	dha-- pa —	ni ni pa ga	ri- — sa —
पा व सी के	व s ळ s	नि s ज s	प s द s

*Symmetry :— Ni Sa Ri- Ga Pa | Ma Pa Dha Ni Ri

Raga No. 14.*

Sa	Ri-	Ri	Ga	Pa	Dha-	Dha
240	250	266$\frac{2}{3}$	300	360	375	400
4			5	6		
	5		6			4
	4				6	
		4				6

×	÷	×	=
dha$_2$ sa ri- ri	ga pa dh-dh	ga pa dh- pa	dha— — —
पा य त्या दे	वा ऽ चे ऽ	न सो डा ऽ	वे ऽ ऽ ऽ
ga pa ga ri	ri- — sa —	dh sa^2 dh-pa	ga ri ri- sa
दो ष रे जा	ती ऽ ल ऽ	अ नं त ज	न्मीं ऽ चे ऽ
	——	——	
ga pa dh- sa^2	ri-^{2} — sa^2 —	dhasa^{2}ri-^{2}ga^2	ri^2· — sa^2 —
न सो डा वे	पा ऽ य ऽ	नि श्च य तो	क ऽ रा ऽ
pa^2 ga^2 ri^{2}ri-^{2}	sa^2 — dha—	dha- —pa—	ga ri ri· sa
आ ळ वा श्री	ध ऽ रा ऽ	भा ऽ व ऽ	व ऽ ळें ऽ

*Symmetry is not observed in this and the next Raga.

Raga No. 15.*

Sa	Ri	Ga	Ma	Pa	Dha-	Dha
240	250	300	320	360	375	400
4		5		6		
6			4			5
	5	6				4
	4				6	

÷	×	=	×
dha$_2$ sa-ri ga	ma dha sa^2—	ga pa dh- ga	ri — sa —
श री र सं	प ऽ त्ति ऽ	मा यें चें ट	धा ऽ ळ ऽ
ga pa dh- sa^2	ri^2 — sa^2—	dha ma ga—	ri — sa —
वा यां चि पा	ल्हा ऽ ळ ऽ	मि र वि ऽ	तो ऽ सी ऽ

——

ga pa dh- sa^2	dha sa^{2}ri^{2}ga^2	ma^{2}ga^{2}ri^2 sa^2	ri^2 — sa^2 —
. ना म हें चि	ता ऽ री ऽ	के श व नि	र्धा ऽ री ऽ
ma^2 ga^2 ri^2 sa^2	ga^2 ri^2 sa^2—	sa^2 dh dh-pa	ma ga ri sa
ह्य णे ह रि	ह ऽ रि ऽ	ए ऽ की ऽ	हे ऽ ळा ऽ

*Note the apparent resemblance with No 9 of 3 groups.

CHAPTER IX.

NEW RAGAS OF FIVE GROUPS.

Raga No. 1.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	250	270	300	320	360	375	400	450
4			5		6			
6				4			5	
			4			5		6
	5		6				4	
		6			4			5

×	=	×	÷
pa$_2$ dha$_2$sa ri-	ga — ma —	ri ga pa dha-	ni — sa^2—
ती र्थां चैं जैं	मू ऽ ळ s	व्र ता चैं जैं	फ ळ
ga pa ma dh	ga ri- sa —	ni$_2$ ri sa ga	ni dha- pa—
व्र ह्म तैं के	व s ळ s	वि s टे s	व s री s
ma ga ri- sa	pa dha sa^2—	sa^2 ni dh- pa	ri ga pa —
तैं आ ह्मीं दे	ख्रि ऽ लैं s	आ पु ले न	य s नीं s
sa^2 dh ma pa	ga ri- dh$_2$ sa	pa ga sa ri	ni dh- ga pa
फि ट लीं पा	र s र्णीं s	लो s च s	ना s चीं s

*Symmetry:—Sa Ri- Ga Ma Pa Dha | Pa Dha- Ni Sa Ri Ga

ga ma pa dh	sa^2 ri-^{2} sa^2 —	ni sa^2 ri^2 ga^2	pa dh- pa —
जी वीं चा जि	व्हा ऽ ळा ऽ	कृ पे चा सा	ग ऽ र ऽ
dh pa ma ga	ri- — sa —	ga^2 ri^2 sa^2 ni	dha- — pa —
उ भा वि टे	व ऽ र ऽ	रा ऽ हि ऽ	ला ऽ से ऽ
ma^{2}ga^{2}ri-^{2}sa^2	dha pa ma —	sa^2 ni dh- pa	ga ri sa —
सु र व र	चिं त नीं ऽ	मा न वां चे	ध्या ऽ नीं ऽ
sa^2 ni dha —	dh- pa ma —	ga — ri —	ri- — sa —
स गु णीं ऽ	नि गु णीं ऽ	तो ऽ चिं ऽ	ए ऽ क ऽ

Raga No. 2.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	250	266$\frac{2}{3}$	300	337$\frac{1}{2}$	360	375	400	450
4•	•		5		6			
	5		6				4	
•			4			5		6
		4					6	
				6				4

×	=	×	÷
ni$_2$ sa ri- sa	ga ri ga —	ma pa dh-pa	ni dha ni —
स्म र ण क	रि ऽ तां ऽ	रा म ना म	ध्व ऽ नी ऽ

*Symmetry:— Ni Sa Ri- Ri Ga | Ma Pa Dha- Dha Ni

ga ri sa ri-	ni$_2$ — sa —	ni dh pa dh-	ma — pa —
ऐ क तां चि	क ऽ णीं ऽ	प ऽ ळ ऽ	य ऽ म ऽ
ri ga ri sa	ni$_2$ ri- sa—	dha ni dh pa	ma dh- pa—
ना म पा ठ	क ऽ रीं ऽ	रा म कृ ष्ण	ह ऽ री ऽ
ga ri ri- sa	ni — sa^2—	ni dh dh- pa	ma — pa —
हो तो ल का	मा ऽ री ऽ	रि ऽ द्धी ऽ	सि ऽ द्धी ऽ
ma pa dh-pa	ni dha pa —	ni sa^2 ri-^{2} sa^2	ga^2 ri^2 sa^2—
सा ध्य तें चि	सा ऽ धीं ऽ	न क री उ	पा ऽ धी ऽ
ni dhapa dh-	ma dha-ni—	ga^2 ri^2 sa^2 ri-^{2}	ni ri-^{2} ga^2—
ज न्मां त रीं	च्या च्या धीं ऽ	ह र ती ऽ	ना ऽ मीं ऽ
ni dh dh- pa	ni dha pa —	ga^2 ri^2 ri-^{2}sa^2	ga^2 ri^2 sa^2—
ना मा ह्म णे	स ऽ वें ऽ	रा म हा चि	भा ऽ वं ऽ
ni sa^2 ri-^{2} ri^2	ga^2 ri^2 ri-^{2}sa^2	ma pa dh-dh	ni dh dh- pa
ना हीं अ ने	क दे व ऽ	रा ऽ में ऽ	वी ऽ ण ऽ

Raga No. 3.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha-	Dha
240	250	$266\frac{2}{3}$	300	320	360	375	400
4			5		6		
6				4			5
	5		6				4
		4					6
	4					6	

=	×	÷	×
dha_2 sa ri- ri	ma — ri —	ga pa dh-dh	sa^2 — dha—
आ म्हीं मा न	वां ऽ नीं ऽ	व र्णा वें तें	का ऽ य ऽ
ri-^{2}sa^2 dh ma	ri — ma —	dh- pa ga sa	dha_2— sa —
सु र व र	पा ऽ य ऽ	वं ऽ दि ऽ	ता ऽ ती ऽ
ri ma sa ri-	dha_2 sa ri-sa	dh sa^2pa dh-	ga pa dh-pa
ग णे श शा	र ऽ दा ऽ	क रि ती गा	य ऽ न ऽ
sa^2dha ma ri	ri- — sa —	pa ga sa dh_2	dha-$_2$—pa_2—
आ दि दे व	ग ऽ ण ऽ	श्रे ऽ ष्ठ ऽ	श्रे ऽ ष्ठ ऽ
ga pa dh- pa	dhasa^2dh-sa^2	dha sa^2ri-^{2}sa^2	$ri^2$$ma^2$ri-^{2}$ma^2$
ज या च्या गा	य ऽ ना ऽ	ति ष्ठ तो शं	क ऽ र ऽ
sa^2dh pa dh-	ga — pa —	$ma^2$$ri^2$ sa^2 ri-^{2}	dha — sa^2—
त या सी पैं	पा ऽ र ऽ	न क ळे ऽ	तु ऽ झा ऽ

*Symmetry:—Dha Sa Ri- Ri Ma | Ga Pa Dha- Dha Sa

pa ga dh- pa	sa² — dha—	sa²dha ri-²sa²	ma² — ri²—
तु का ह्म णे	आ s ह्यीं s	किं क र ते	कि s ती s
ma² ri² ri-²sa²	dha —ma—	sa²dha dh-pa	ga — sa —
इं द्रा ची ती	म s ती s	ना s ग s	वि s ली s

Raga No. 4.*

Sa	Ri-	Ri	Ga	Ma	Pa	Dha-	Dha	Ni
240	250	266$\frac{2}{3}$	300	320	360	375	400	450
4			5		6			
			4			5		6
	5		6				4	
6				4			5	
		4					6	

÷	×	=	×
ri ma ga sa	ri-dha₂ sa —	dha sa² ni pa	dha-ga pa—
ना मा चे नि	पा s ठें s	जा ती ल वै	कुं s ठें s
ga ri ri- sa	ma dhasa²—	ni dh dh- pa	sa ga pa —
पुं ड ली क	पे s ठे s	प्र ग ट s	अ s से s
dha₂ sa ri-ga	ma — ri —	ga pa dh- ni	sa² — dh—
वि ठ्ठ ल हा	मं s त्र s	ला ग त से	शा s स्त्रीं s

*Symmetry:—Dha Sa Ri- Ri Ga Ma | Ga Pa Dha-Dha Ni Sa

*Note the apparent resemblance with No 1 of 5 groups.

sa^2 dh ma ga	ri ri- sa —	pa ga sa ni$_2$	dh$_2$dh-$_2$pa$_2$—
आ णि क ऽ	ना ऽ हाँ ऽ	ना ऽ मा ऽ	वी ऽ ण ऽ
ga pa dha-ni	sa^2 — dha—	dha sa^{2}ri-^{2}ga^3	ma^2 — ri^2 —
पु रा ण व्यु	त्प ऽ त्ती ऽ	न ल ग ती	श्रु ऽ ती ऽ
ga^{2}sa^2 ni dha	dha- — pa—	dha ma ga ri	ri- — sa —
ह रि पं थीं	मु ऽ नी ऽ	गे ऽ ले ऽ	गे ऽ ले ऽ
ni sa^2 dha ni	pa dh- ga pa	ga^2 ma^{2}ri^{3}ga^2	sa^{3}ri-^{2} dh sa^2
ना मा ह रि	ना ऽ में ऽ	आ प ण उ	द्ध ऽ रे ऽ
ma^2 ga^{3}ri^{2}ri-^{2}	sa^2 dhama--	sa^2 ni dh dh-	pa ga sa --
ज न्मा ची ये	र क्षा र ऽ	ह ऽ रे ऽ	ना ऽ में ऽ

Raga No. 5.*

Sa	Ri	Ga-	Ga	Ma	Pa	Dha-	Dha	Ni-	Ni
240	270	288	300	320	360	384	400	432	450
4			5		6				
5		6				4			
6				4			5		
	6				4				5
		4			5			6	

*symmetry:-SaGa-GaMaPaDha-Dha | Pa Ni- Ni Sa Ri Ga-Ga
(Raga No. 1 of 3 groups) | (No. 48 of 3 groups)

—	×	÷	×
sa^{2} dh dh-pa	ma ga ga-sa	pa ga ga- ri	sa ni$_{2}$ ni-$_{2}$pa$_{2}$
ज गां त पि	शा ऽ च ऽ	अं त रीं श	हा ऽ णा ऽ
dh dh-pama	ga- ga ma--	ga ga- ri sa	ni- ni sa^{2} —
स दा ब्र ह्मीं	जा ऽ णा ऽ	नि ऽ म ऽ	ग्न ऽ तो ऽ
dh pa ma ga	dha-$_{2}$sa ga-sa	ga ri sa ni$_{2}$	ga- pa ni-pa
नि म ग्न तो	स ऽ दा ऽ	जै सा म क	रं ऽ द ऽ
ma ga ga-sa	dh dh-pama	sa^{2} ni ni- pa	ga ga- ri sa
अं त र्वा ह्य	भे ऽ द ऽ	वे ऽ ग ऽ	ळा ऽ ले ऽ

---

ri^{2} sa^{2} ni ni-	pa ga ga- sa	pa maga ga-	sa^{2} dh dh-pa
वे ग ळा ले	भे ऽ द ऽ	कि ती त्या अ	स ऽ ती ऽ
ga$_{2}$ ga-$_{2}$ sa$_{2}$ dh	dh- pa ma—	ni ni- pa ga	ga- ri sa —
ह ऽ द्द त	त्या ऽ ची ऽ	ग ऽ ती ऽ	न क ळे ऽ

Raga No. 6*

Sa	Ri-	Ri	Ga-	Ga	Ma	Pa	Dha-	Dha	Ni
240	256	$266\frac{2}{3}$	288	300	320	360	384	400	$426\frac{2}{3}$
4				5		6			
5			6				4		
6					4			5	
	4				5		6		
		5			6				4

×	÷	×	=
sa^2 ni dh dh-	ma ri ri- sa	pa maga ga-	sa^2 dh dh-pa
ಗಿ ರಿ ಯ ಬ	ದಿ ಯೊ ಳಿ ಹ	ಗು ಡಿ ಸ ಲ	ದೋ ಽ ಳು ಽ
ri- ma dh-sa^2	dh ni ri^2 sa^2	dh-$_2$ saga-pa	ga ma dh pa
ಇ ರ ಲು ಮು	ನಿ ಯ ಹೆ ಸ	ರಿ ಡು ವ ರು	ಜ ನ ರು ಽ
ma ri ri- sa	ni dh dh- ma	sa^2 dh dh-pa	maga ga- sa
ಮು ನಿ ಗಾ ಽ	ದ ರು ಇ ಹು	ದ ಖಿ ಲ ಸಂ	ಸಾ ಽ ರಾ ಽ
ga ma pa dh	dh-sa^2ga-$^2sa^2$	dh ni sa^2 ri^2	ri-$^2ma^2$dh-ma
ದ ನಿ ಕೆ ರು	ಹು ಡು ಗ ರು	ಮು ಡ ದಿ ಯ	ರಿ ರು ವ ರು
pa dh-dh sa^2	maga^{2}ga-$^2sa^2$	sa^2 ri-$^2ri^2$ ma^2	ni dh dh-ma
ಕೋ ಽ ಷ ತೋ	ಽ ಷ ಚೇ ಽ	ರಾ ಽ ಟ ಗ	ಳಿ ರು ವ ವು

*symmetry:-MaDha-DhaNiSaRi-Ri | SaGa-GaMaPaDha-Dha
(Raga No. 22 of 3 groups) | (No. 1 of 3 groups)

dh pa dh-ma	ga^{2}sa^{2}ga-^{2}sa^2	ri^2 sa^2 ri-^{2} ni	dh madh-ma
ಖ ಳ ಗ ಮಂ	ಽ ದಿ ಗ ಳ	ಜ ಗ ಳ ಗ	ಳಿ ರು ವ ವು
ma^2 ri^2 ri-^{2}sa^2	ni dh dh-ma	sa^2 dh dh-pa	ma ga ga-sa
ಮು ನಿ ಯೆಂ ಕ	ದ ರಿ ಮು ನಿ	ಸಿ ದ ವ ನು	ಅ ಹು ದೇ ಽ

Raga No. 7.*

Sa	Ri-	Ri	Ga-	Ga	Pa	Dha-	Dha	Ni-	Ni
240	250	270	288	300	360	375	400	432	450
4				5	6				
				4		5			6
	5			6			4		
		6			4				5
			4		5			6	

÷	×	=	×
sa^2 ri-^{2} dh pa	ga ga- sa —	pa dha-ga ri	ni ni- pa —
ओ ळ खा रे	व ऽ स्तु ऽ	सां डा र क	ल्प ऽ ना ऽ
dh pa ga ga-	ri- sa dha$_2$ sa	ga ri ni$_2$ ni-$_2$	dh- pa ga pa,
न का आ ड	रा ऽ ना ऽ	जा ऽ ऊं ऽ	झ ऽ णीं ऽ
ni dh- ga^2 ri^2	ni- — pa —	ga^2 ri-^{2}dh pa	ga-^{2} — sa^2—
झ णीं जा ल	को ऽ टें ऽ	बु ड वा ल	हो ऽ त ऽ

*Symmetry —Sa Ri- Ga- Ga Pa Dha | Pa Dha- Ni- Ni Ri Ga

pa^2 ga^2 ri^2 ni	ni-dh- pa —	sa^2 dha paga	ga- ri- sa —
वि चा री म	नां ऽ त ऽ	आ ऽ पु ऽ	लि ऽ या ऽ

Raga No. 8.*

Sa	Ri	Ga-	Ga	Ma	Ma	Pa	Dha	Ni-	Ni
240	270	288	300	324	337½	360	405	432	450
4			5			6			
	6					4			5
		4				5		6	
	4				5		6		
	5			6		•		4	

÷	×	=	×
sa^2 ni ni- pa	ga ga- ri sa	pa ma ma-ri	ni ni- dha pa
आ पु लि या	जी ऽ वें ऽ	शि वा सि प	हा ऽ वें ऽ
ga ga- ri sa	ni ni- pa —	ni ni-dha pa	ma ma- ri —
आ त्म. सु ख	ध्या ऽ वें ऽ	वे ऽ ळो ऽ	वे ऽ ळां ऽ
ri ma-ma pa	dha ni ni- pa	pa ni - ni sa^2	ri ga^2 ga-^{2}sa^2
ध्या वें आ त्म	सु ऽ ख ऽ	स्व रू पीं मि	ळा ऽ वें ऽ
ma^{2}ma ^{2}ri^{2}ni^2	ni- dha pa—	ni ni- pa ga	ga- ri sa —
मू र्ती ली न	व्हा ऽ वें ऽ	तु ऽ का ऽ	ह्म ऽ णे ऽ

*Symmetry:—PaNi-Ni Sa RiGa-Ga | RiMa-MaPaDhaNi-Ni
(Raga No. 48 of 3 groups) | No. 25 of 3 groups)

Raga No. 9.*

Sa	Ri	Ga-	Ga	Ma	Pa	Dha-	Dha·	Dha	Ni
240	250	288	300	320	360	375	384	400	450
4			5		6				
5		6					4		
6				4				5	
			4			5			6
	5		6					4	

×	=	×	÷
ni dh dh· pa	ga ri sa —	pa ma gaga-	sa^{2} dh dh· —
मा या जा ळ	ना से या ऽ	ना में क रु	नि ऽ ऽ ऽ
dh$_2$ ri ga dh·	ni dha pa —	ma$_2$ dh$_2$ sa ga	pa ma ga- —
प्री ति च क्र	पा ऽ णीं ऽ	अ ऽ सो ऽ	द्या ऽ वी ऽ
	——	——	
ga pa sa^{2} sa^{2}	ma dha sa^{2}—	dh· ni ga^{2} ga^{2}	dh ri·^{2} ga^{2} —
अ सों द्या वी	प्री ऽ ती ऽ	सा धूं च पा	यां ऽ सी ऽ
pa^{2} ma ga^{2}ga^{2}-^{2}	sa^{2} dha dh· —	ni dh dh pa	ga ri sa —
क दा की र्त	ना ऽ सी ऽ	सो ऽ ड्रं ऽ	न ऽ ये ऽ

*Symmetry in this Raga is in the ratio of 4 : 5 as follows:—
Sa Ga- Ga MaPaDha-(384)Dha | GaPa Dha-(375)Dha NiSaRi
(Raga No. 1 of 3 groups | (No. 34 of 3 groups)

Raga No. 10.*

Sa	Ri•	Ri	Ga-	Ga	Ma	Pa	Dha-	Dha
240	250	266⅔	288	300	320	360	384	400
4				5		6		
5			6				4	
6					4			5
	5			6				4
		4						6

÷	×	=	×
sa dh ma pa	dh· pa ga-sa	dh_2 sa ri-ga	sa — dha_2 ri
वा म स व्य	दो हीं क डे	दि से ना रा	य ऽ ण ऽ
dh ma pa ga	sa $dh\text{-}_3$ saga-	sa dh_2 sa ri-	ga — ri —
खां लीं पा हे	अ थ वा ऽ	व री ह री	ह ऽ री ऽ
dh.pa ma —	dh· pa ga—	pa ga sa —	ga ri ri- sa
ाजि क डे ऽ	प हा वें ऽ	ति क डे ऽ	ह री ह री
ma dhasa sa	dh ri- ga sa	dha-sa ga—	ga ri dha sa
हो ळे ञ्ञां कू	नि यां पा हे	पु ढें गो ऽ	पा ळ आ हे
dh sa ma ga	ga- ri ri- sa	dh pa maga	ga- ri ri- sa
अ णु रे णु	च क्र पा णी	खू ण झा ली	दा सी ज नी

—[END]—

*Symmetry is not observed in this Raga.